The Distribution of Interbirth Intervals in Rural China, 1940s to 1970s

Ansley J. Coale,
Shaomin Li
and Jing-Qing Han

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PAPERS OF THE EAST-WEST POPULATION INSTITUTE

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CONTENTS

ACKNOWLEGEMENTS *ix*

ABSTRACT *1*

BACKGROUND *1*

METHODOLOGY AND SUMMARY OF FINDINGS *3*

- Empirical Distribution of the Time to the Next Conception Following Births of Children Who Survived to 1982 *3*
- Distribution of the Risk of Conception by Duration of the Time since the Preceding Birth *5*
- Results of the Analysis of the Distribution of the Time to Conceive Following the Births of Children Who Survived to 1982 *14*
- The Monthly Probability of Conception after Marriage *17*
- The Distribution of Durations of Interbirth Intervals Following the Births of Children Who Died before 1982 *20*
- The Distribution of Intervals to the Third Birth Following Second Births of Children Who Died before 1982 *22*

THE MATHEMATICS OF THE MONTHLY DISTRIBUTION OF THE INTERVAL FROM BIRTH TO THE NEXT FRUITFUL CONCEPTION *25*

- Definitions and General Relations *25*
- Calculation of Frequency Distributions *27*
- Heterogeneity in the Fecundity of Couples and Declining $k^*(x)$ *28*
- The Possibility of Approximately Constant Fecundability of the Susceptible *28*
- Estimation of the Distribution of the Duration of Nonsusceptibility, $g(d)$ *30*
- Distribution of Intervals Following the Birth of a Child Who Died before 1982 *30*

CONCLUSION *34*

REFERENCES *35*

FIGURES AND TABLES

FIGURES

1. Distribution of the duration of the time to conceive, *f*(*d*), following first births: Rural China, 1944–46 3
2. Distribution of the duration of the time to conceive, *f*(*d*), following first births: Rural China, 1951–53 4
3. Distribution of the duration of the time to conceive, *f*(*d*), following first births: Rural China, 1963–65 4
4. Distribution of the duration of the time to conceive, *f*(*d*), following first births: Rural China, 1970–72 5
5. Distribution of the risk of conception, *k*(*d*), following first births: Rural China, 1944–46 6
6. Distribution of the risk of conception, *k*(*d*), following first births: Rural China, 1951–53 6
7. Distribution of the risk of conception, *k*(*d*), following first births: Rural China, 1963–65 7
8. Distribution of the risk of conception, *k*(*d*), following first births: Rural China, 1970–72 7
9. Risk of conception, *k*(*d*), by duration of interval since first birth, durations 0–52 months: Rural China, unadjusted data 8
10. Risk of conception, *k*(*d*), by duration of interval since first birth, durations 0–52 months: Rural China, number of conceptions beyond 52 months adjusted downward 8
11. The distribution of the period of nonsusceptibility following first births: Rural China, 1951–53, 1963–65, and 1970–72 9
12. The distribution of the period of nonsusceptibility following first births compared with a normal distribution, the mean and standard deviation being calculated from the distribution of the period of nonsusceptibility: Rural China, 1951–53 10
13. The distribution of the period of nonsusceptibility following first births compared with a normal distribution, the mean and standard deviation being calculated from the distribution of the period of nonsusceptibility: Rural China, 1963–65 10
14. The distribution of the period of nonsusceptibility following first births compared with a normal distribution, the mean and standard deviation being calculated from the distribution of the period of nonsusceptibility: Rural China, 1970–72 11

15. Empirical distribution of time to conceive after first births (male and female combined), compared with the convolution of normal and exponential distribution: Rural China, 1944–46 *12*

16. Empirical distribution of time to conceive after first births (male and female combined), compared with the convolution of normal and exponential distribution: Rural China, 1951–53 *12*

17. Empirical distribution of time to conceive after first births (male and female combined), compared with the convolution of normal and exponential distribution: Rural China, 1963–65 *13*

18. Empirical distribution of time to conceive after first births (male and female combined), compared with the convolution of normal and exponential distribution: Rural China, 1970–72 *13*

19. Estimated distribution of the time to conceive following the birth of a first child who died in infancy: Rural China, various time periods *21*

20. Estimated distribution of time to conceive following the birth of a second child who died in infancy: Rural China, 1944–46 *23*

21. Estimated distribution of time to conceive following the birth of a second child who died in infancy: Rural China, 1951–53 *23*

22. Estimated distribution of time to conceive following the birth of a second child who died in infancy: Rural China, 1963–66 *24*

23. Estimated distribution of time to conceive following the birth of a second child who died in infancy: Rural China, 1970–72 *24*

24. Estimates of the frequency distribution of the time to conceive, $f(d)$, following the birth of a first child who died in infancy, with different values of w (proportion dying in infancy of those who died by 1982): Rural China, 1963–65 *32*

25. Comparison of the proportion of children born between 1956 and 1964 who died before 1982 with the crude death rate for the same years: Rural China *33*

26. Estimated proportion, w, of children born between 1956 and 1964 who died in infancy: Rural China

TABLES

1. Parameters of the convolution representing the distribution of the time to conceive following the birth of a child who survives: Rural China *15*
2. Proportion of couples (per 1,000) who ultimately had a live birth, but had not experienced conception leading to a live birth by *t* months after marriage: Rural China *18*
3. Average monthly probability of conception (per 1,000) leading to a live birth: Rural China, various intervals after marriage. *19*
4. Average conception rates following marriage and first birth: Rural China *20*
5. Proportion of children who died before 1982: Rural China *34*

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Financial support for the East-West Population Institute's research on China's demography has come from the Rockefeller Foundation, the Hewlett Foundation, and the United Nations Fund for Population Activities.

ABSTRACT The One per Thousand Fertility Sampling Survey conducted in 1982 in China by the State Family Planning Commission includes reports of the date of first marriage and the date of each birth experienced by women between 15 and 67 years of age at the time of the survey. From these data we have determined the distribution of the duration of intervals from marriage to the first fruitful conception, and from the first and second births to the next fruitful conception. Analysis of these distributions reveals that the monthly probability of conception before the first and second births increased from the 1940s to the 1970s; that intervals from the second to the third birth were always longer than from the first to the second; that conception rates were lower following a male birth; that mortality above age one was elevated more than infant mortality during the crisis of 1959–60; and that some women who lost a second child soon after its birth resumed breastfeeding of an older child. These inferences contribute to our understanding of certain features of the decline of fertility in China, such as the slight increase in fertility at durations of marriage less than five years. The analysis also shows the surprising usefulness of precise histories of dates of vital events.

BACKGROUND

In 1982 the State Family Planning Commission of China conducted the One per Thousand Fertility Sampling Survey covering 28 provinces in China (all except Tibet). The sample households contained a population of more than one million persons. All women (about 311,000) 15 to 67 years of age in the sampled households were interviewed and provided detailed lifetime fertility histories. A significant feature of these histories was the listing of the precise date of birth for each child each respondent had borne, the sex of the child, and whether the child was still alive at the date of the survey. The data are of unusually high quality because of the careful design and execution of the survey, the virtually complete cooperation of the respondents, and the precise knowledge of the date of every birth.[1]

The survey results, published in detail for mainland China as a whole (Coale and Chen 1987; China Population Information Centre 1984; State Family Planning Commission 1984), have permitted the reconstruction of Chinese fertility and nuptiality since the early 1950s with considerable precision.

---

1. Despite the accuracy with which dates of birth are reported in the survey, there are slight systematic distortions visible in the distributions of interbirth intervals—distortions that are unchanged except for a shift of nine months when the distribution of time to conceive is tabulated. The distribution of intervals following first births that occurred in 1944–46 is quite irregular (Figure 1). The double peaks in the distribution are not believable, especially since the intervals were initiated in three separate years. Comparison of the distribution with a three-term moving average reveals excesses at groupings (such as 22–24 and 34–36 months) that include an interval of an integral number of years. Slight "heaping" is still evident in the intervals following births in the 1950s and 1960s but is not visible following births in the 1970s.

In the summer of 1985 the computer tapes containing the data for the individual women interviewed in the survey were brought to the East-West Population Institute. Analysis of the data was conducted in cooperation between Chinese experts (mostly from the State Family Planning Commission) and staff members and consultants at the East-West Population Institute.

As one of the consultants to this project, Coale participated in the calculation of age-specific fertility rates and marriage duration-specific fertility rates for rural, urban, and total populations of the 28 provinces from the 1940s to 1981 (Coale and Chen 1987). One of the intriguing features of the results was that fertility rates at 5–9 years after marriage were higher in rural China in the 1950s (before the years of crisis associated with the "Great Leap Forward") than in the 1940s, and higher in the postcrisis years of the 1960s than in the 1950s. At marriage duration 0–4, marital fertility was slightly higher in the 1970s than in the 1960s.

Other evidence, cited later, indicates the absence of effective contraception or abortion before 1970 at marriage duration 5–9 years, and at duration 0–4 years until 1979.

The increase from decade to decade in marital fertility rates at early durations of marriage indicates that the average interval between first and second, and between second and third, births was getting shorter. Because the length of gestation did not change, the interval between birth and the next conception leading to another birth must have shortened to the same degree. We therefore decided to compile from the individual birth histories, frequency distributions of the number of months elapsed prior to the next conception following all first and second births recorded for the rural component of the sample population in 1944–46, 1951–53, 1963–65, and 1970–72. These dates were chosen so that the length of the interval would not be affected by the crisis-induced low fertility of 1958–61. The interval from birth to next conception leading to a live birth is equal to the interbirth interval, less nine months. Separate tabulations were made by sex of the child whose birth initiated the interval in question, and of intervals following the births of children who survived to 1982, and of children who died before 1982.

The remainder of this monograph is in two sections. The first describes the analysis and presents many of the results in relatively nontechnical and nonmathematical terms; the second section is a fuller and more technical development of the argument.

METHODOLOGY AND SUMMARY OF FINDINGS

Empirical Distribution of the Time to the Next Conception Following Births of Children Who Survived to 1982

The distributions of the length of intervals from first birth to the next fruitful conception are shown in Figures 1-4, excluding intervals following the births of children who died before 1982. The analysis of these distributions is facilitated by the assumption that each distribution is the convolution of two constituent distributions: a frequency distribution of the length of time following a live birth during which the couple is not susceptible to conception, and a negative exponential distribution of the elapsed time prior to the next conception once the couple becomes susceptible. A convolution is the frequency distribution of the sum of two or more variates, each of which has its own independent distribution. In this instance, the "time to conceive" is the sum of the "dead time" following birth and the time it takes to conceive once at risk. The "dead time" includes the duration of amenorrhea and anovulation following a live birth and also the mean additional delay occasioned by pregnancies that result in miscarriages or stillbirths.

Figure 1. Distribution of the duration of the time to conceive, *f*(*d*), following first births: Rural China, 1944-46

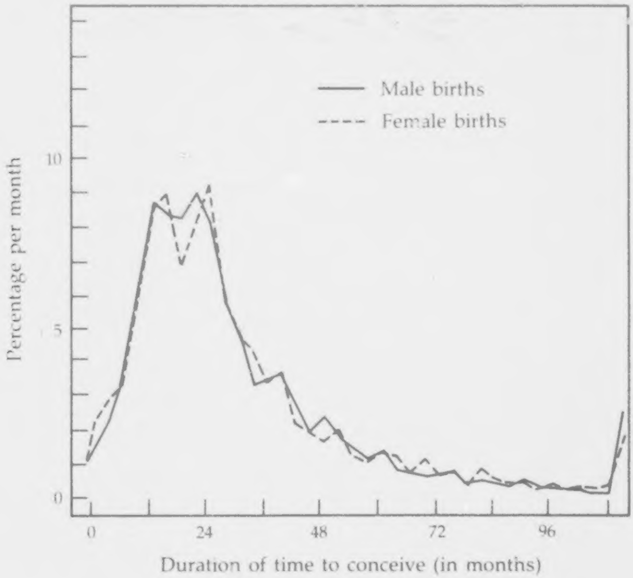


Figure 2. Distribution of the duration of the time to conceive, *f*(*d*), following first births: Rural China, 1951–53

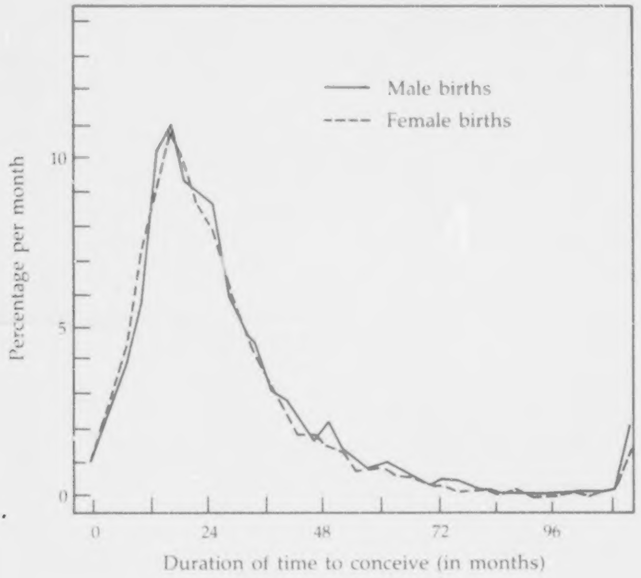


Figure 3. Distribution of the duration of the time to conceive, *f*(*d*), following first births: Rural China. 1963–65

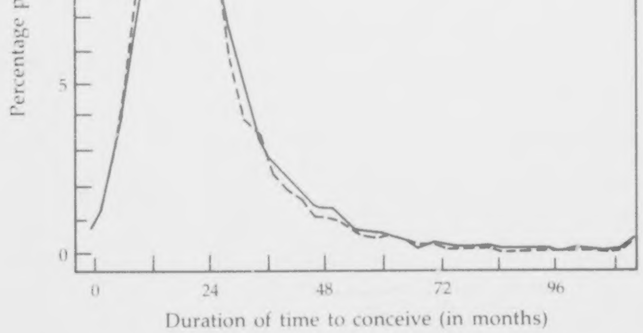
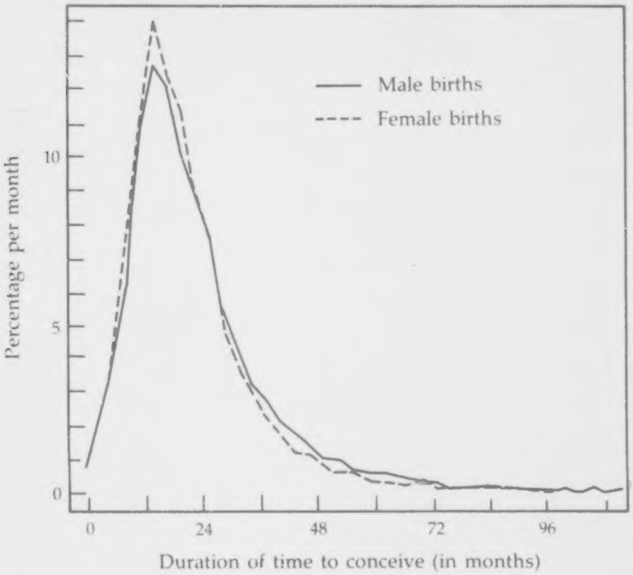


Figure 4. Distribution of the duration of the time to conceive, $f(d)$, following first births: Rural China, 1970–72



Distribution of the Risk of Conception by Duration of the Time since the Preceding Birth

The "risk" of conception *d* months after the first birth may be defined as the number of fruitful conceptions at time *d* (in months) divided by the number of couples who conceive at a duration equal to or greater than *d*. The risk function so defined is shown in Figures 5–8.

When the frequency distribution of conception is the convolution of the duration of nonsusceptibility and an exponential, the risk function increases to a maximum as more and more couples resume susceptibility, and then remains constant at the assumed constant probability of conception of susceptible couples. The risk functions actually decline after about month 27. This decline may be the result of heterogeneous fecundability, as the more fecund are eliminated first, but we attribute it mostly to an abnormally large proportion of intervals that are more than 50 months in length. The abnormal number of long intervals may be the result of omission of a birth, or of separation of spouses by death, military service, social disturbance, or periodic migration. With modest adjustment of the number of intervals beyond 52 months, the risk functions become approximately level, and the approximate value of a constant risk of conception can be calculated (Figures 9 and 10).

Figure 5. Distribution of the risk of conception, *k*(*d*), following first births: Rural China, 1944–46

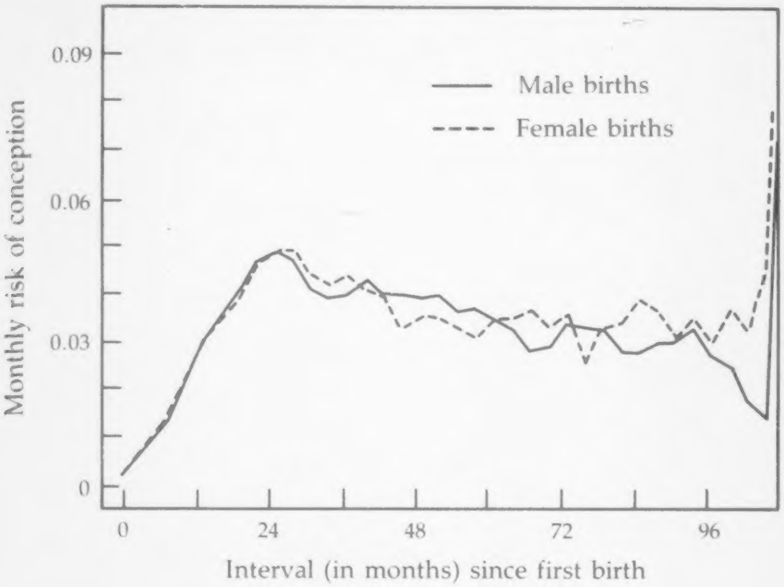


Figure 6. Distribution of the risk of conception, *k*(*d*), following first births: Rural China, 1951–53

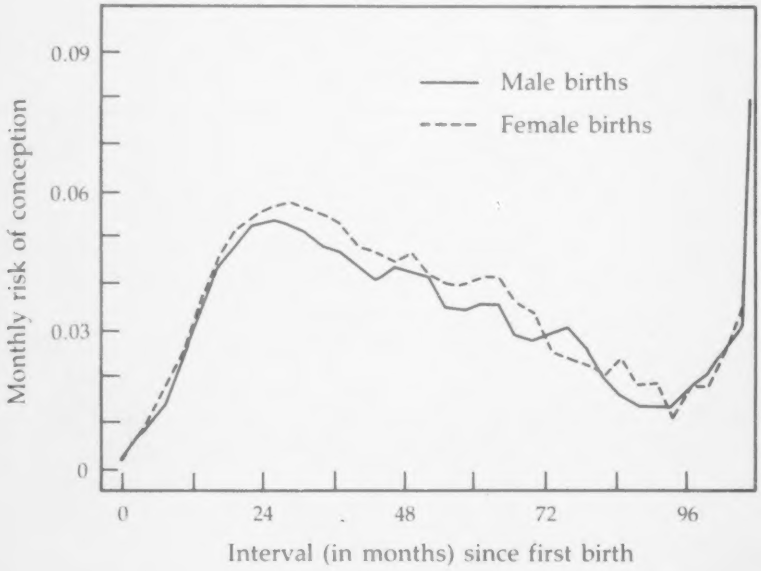


Figure 7. Distribution of the risk of conception, *k*(*d*), following first births: Rural China, 1963–65

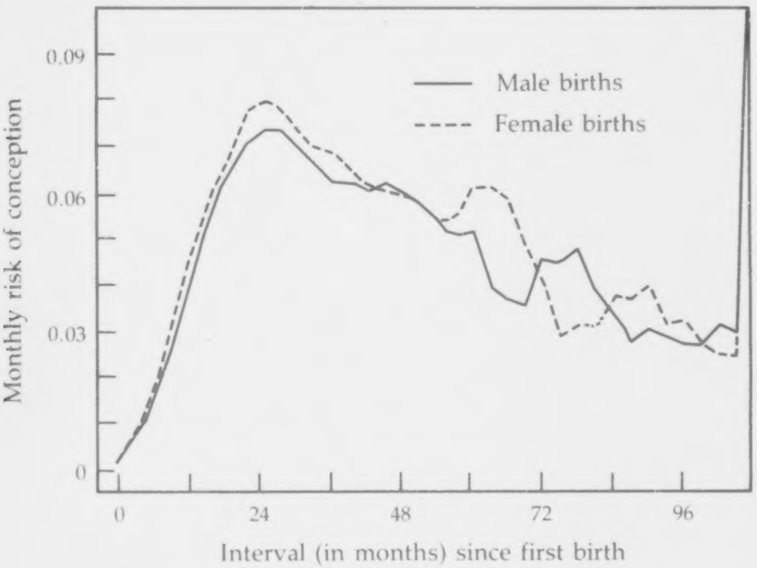


Figure 8. Distribution of the risk of conception, *k*(*d*), following first births: Rural China, 1970–72

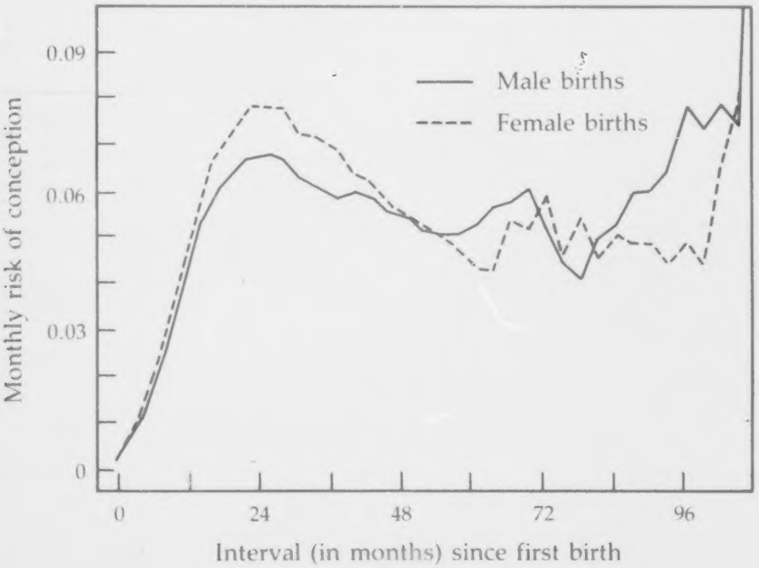


Figure 9. Risk of conception, *k*(*d*), by duration of interval since first birth, durations 0–52 months: Rural China, unadjusted data

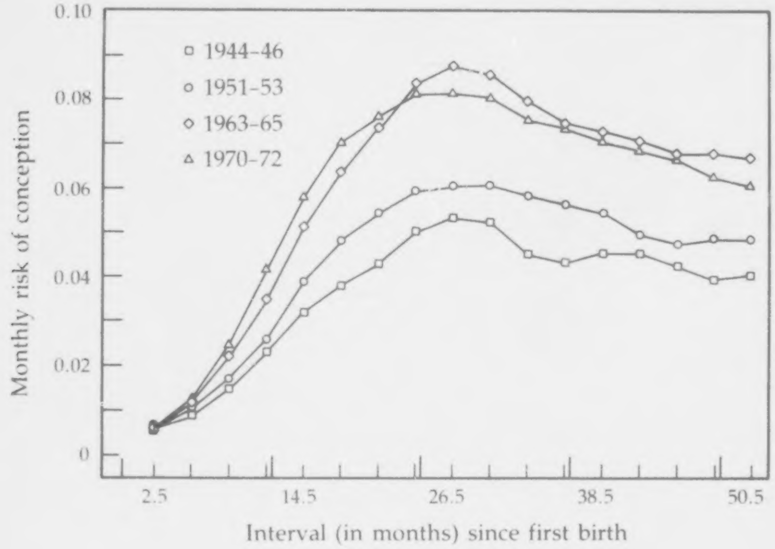
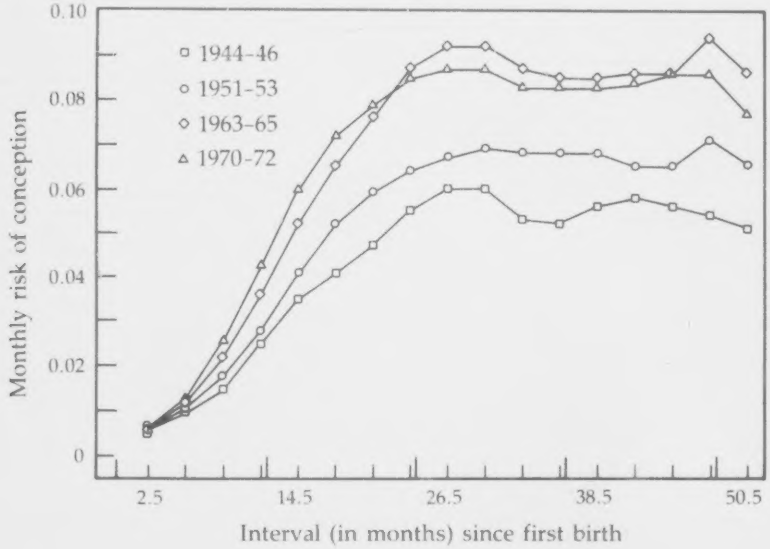
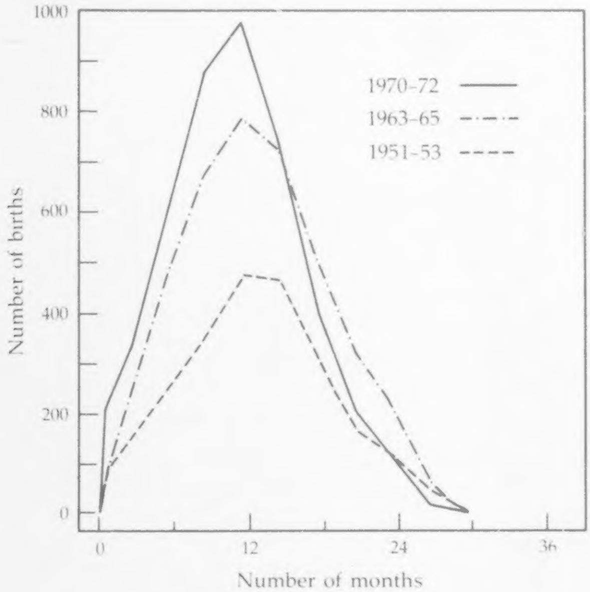


Figure 10. Risk of conception, *k*(*d*), by duration of interval since first birth, durations 0–52 months: Rural China, number of conceptions beyond 52 months adjusted downward



Once a constant monthly risk of conception among susceptible couples is estimated, numerical calculation of the distribution of the "dead time" becomes possible.[2] The calculated distributions following first births in 1951–53, 1963–65, and 1970–72 are shown in Figure 11. They closely resemble normal distributions, as shown in Figures 12–14. In Figures 15–18 the recorded distribution of birth interval length is compared with the convolution of a normal and an exponential distribution. In each figure there are two convolutions: one in which the mean and standard deviation of the normal and the exponent of the exponential are determined by maximum likelihood, and the other in which the exponent of the exponential is the

Figure 11. The distribution of the period of nonsusceptibility following first births: Rural China, 1951–53, 1963–65, and 1970–72



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[2] If the distribution of the interval from birth to the next conception, $f(d)$, is the convolution of unknown distribution $g(d)$, and an exponential distribution with an exponent $-k$, it can be shown that $g(d) = f(d) + f'(d)/k$, where $f'(d)$ is the derivative of $f(d)$. Thus $g(d)$ can be calculated from $f(d)$ and k by numerical approximation of the derivative of $f(d)$.

Figure 12. The distribution of the period of nonsusceptibility following first births compared with a normal distribution, the mean and standard deviation being calculated from the distribution of the period of nonsusceptibility: Rural China, 1951–53

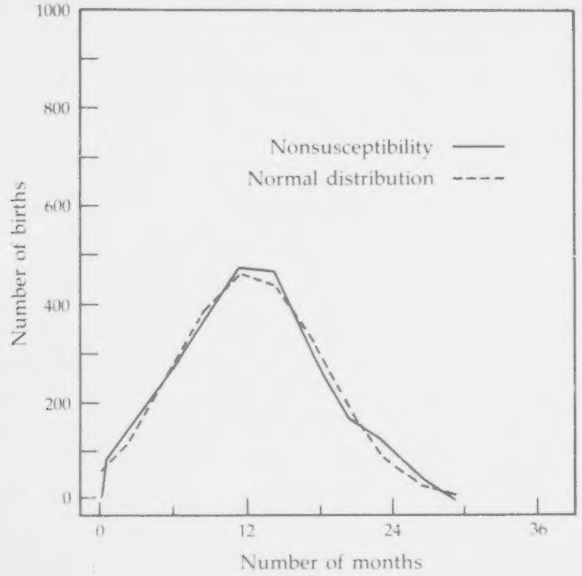


Figure 13. The distribution of the period of nonsusceptibility following first births compared with a normal distribution, the mean and standard deviation being calculated from the distribution of the period of nonsusceptibility: Rural China, 1963–65

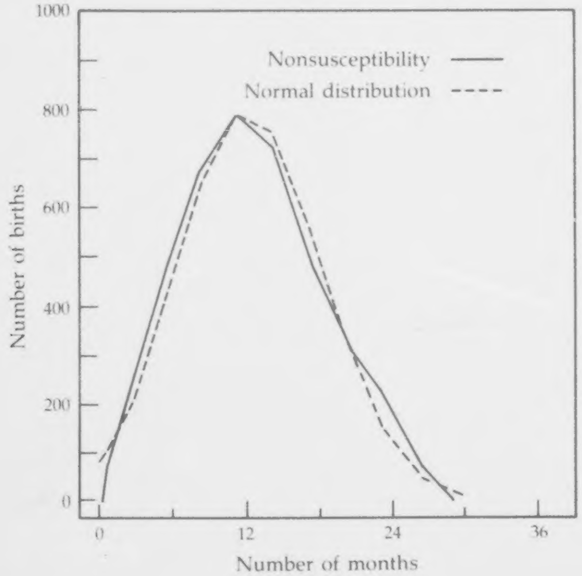
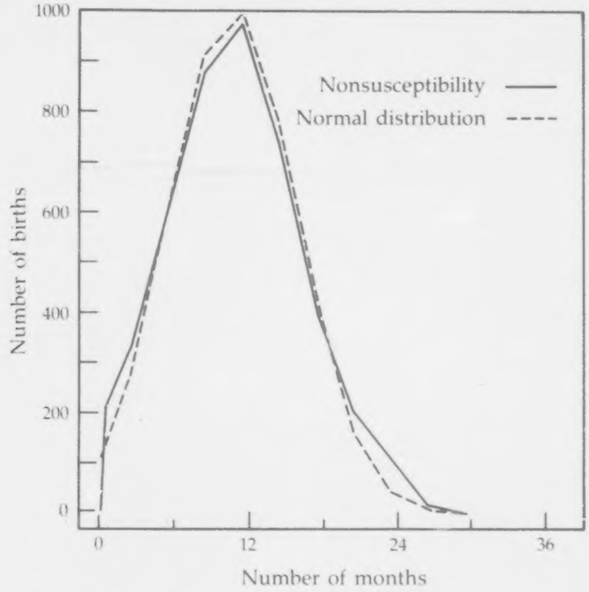


Figure 14. The distribution of the period of nonsusceptibility following first births compared with a normal distribution, the mean and standard deviation being calculated from the distribution of the period of nonsusceptibility: Rural China, 1970-72



constant value of risk calculated after removing the estimated excess intervals of more than 52 months' duration. The distribution of the duration of the period of nonsusceptibility is determined by simple numerical calculations (described in the mathematical section of this paper). The mean and standard deviation of this distribution are assigned to the normal.

The close fit of the convolutions to the recorded data is reassuring support for the assumption of independent normal and exponential constituents of interbirth intervals in China.

Figure 15. Empirical distribution of time to conceive after first births (male and female combined), compared with the convolution of normal and exponential distribution: Rural China, 1944–46

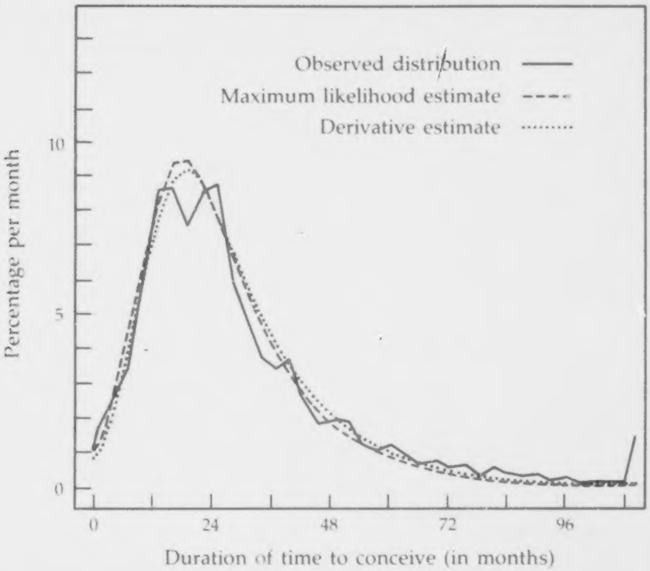


Figure 16. Empirical distribution of time to conceive after first births (male and female combined), compared with the convolution of normal and exponential distribution: Rural China, 1951–53

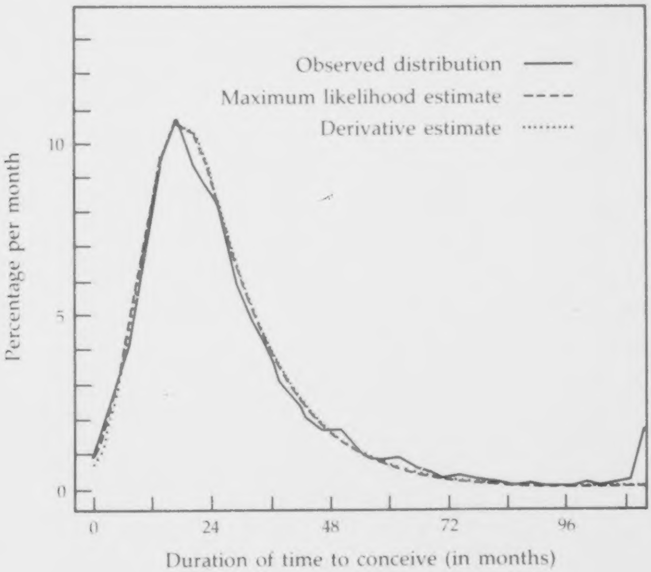


Figure 17. Empirical distribution of time to conceive after first births (male and female combined), compared with the convolution of normal and exponential distribution: Rural China, 1963–65

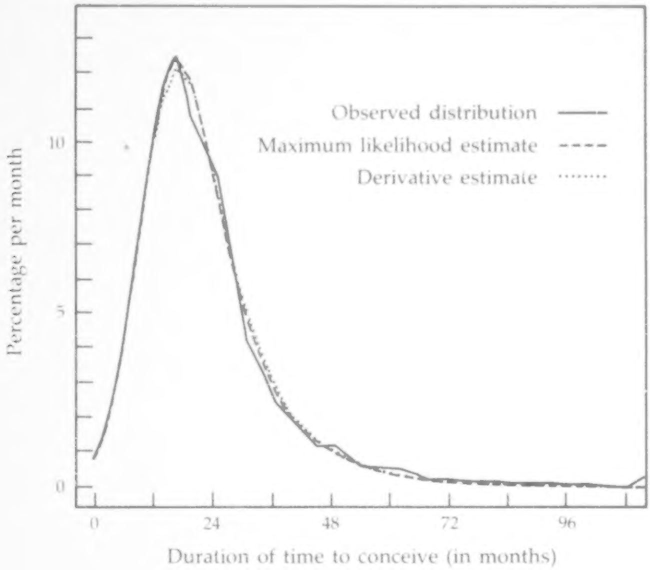
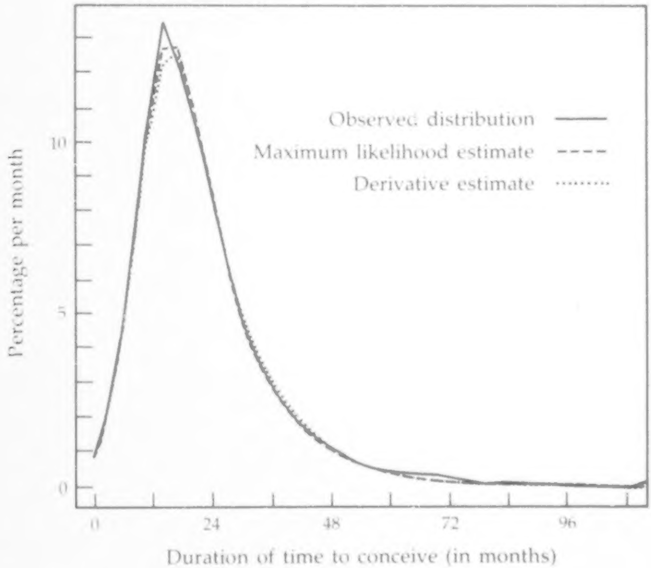


Figure 18. Empirical distribution of time to conceive after first births (male and female combined), compared with the convolution of normal and exponential distribution: Rural China, 1970–72



Results of the Analysis of the Distribution of the Time to Conceive Following the Births of Children Who Survived to 1982

The parameter values for the mean and standard deviation of the duration of dead time and the monthly risk of conception of the susceptible, following first births and second births, when the birth initiating the interval was a child who survived to 1982 are listed in Table 1. Separate values are shown for intervals between male and female births and the next conception for 1944–46, 1951–53, 1963–65, and 1970-72.

There are several noteworthy features of the mean length of the period of nonsusceptibility (μ) and the mean time to conceive ($1/k^*$) discernible in Table 1.

1. Except for birth intervals initiated in the 1940s, for which the data are least reliable, the mean length of the fitted distribution of intervals ($\mu + 1/k^*$) is greater for the interval from the second to the third than from the first to the second birth.[3]

2. The mean interval between the first and second birth falls from the 1940s to the 1970s. The interval from the second to the third birth declines from the 1950s to the 1960s, but increases from the 1960s to the 1970s, probably because of contraceptive practice in the latter period.

3. Intervals following a male birth are always longer than intervals following a female birth.

4. The length of the "dead time" (period of nonsusceptibility) scarcely varies whether male or female births initiate the interval, nor does dead time vary with the decade of the initial birth, except for a reduced dead time for interval 1-2 in the 1970s. The period of susceptibility is always shorter following the first birth than following the second.

5. The monthly probability of conception, k^*, is always greater following a female birth. Except in the 1940s, it is always greater following the first birth than following the second.

How can these features of the distribution of the length of interbirth intervals be explained? There is no information from the fertility survey about the practice of contraception, the duration and intensity of breastfeeding, separation of spouses, or fertility intentions during the respondents' reproductive lives. Our inferences must be based on the birth histories themselves and are necessarily conjectural.

---

[3] The comparison between intervals 1–2 and 2–3 is not a comparison of intervals within the same marriage cohorts; it is not, in other words, a comparison of birth intervals for the same women as they move through their reproductive experience. Rather, the comparisons are between intervals following the first births that occurred in a specified time period, and following the second births that occurred in the same period.

Table 1. Parameters of the convolution representing the distribution of the time to conceive following the birth of a child who survives: Rural China

Birth order	1944–46			1951–53			1963–65			1970–72		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1st birth												
μ	12.3	12.5	12.4	12.0	12.0	12.0	12.1	12.1	12.1	10.6	10.9	10.7
sigma	6.17	7.20	6.74	6.10	6.55	6.12	5.86	6.07	5.95	5.34	5.44	5.38
k^*	0.050	0.064	0.057	0.066	0.072	0.069	0.085	0.097	0.090	0.078	0.095	0.085
$\mu + 1/k^*$	32.3	28.1	29.9	27.2	25.9	26.5	23.9	22.4	23.2	23.4	21.4	22.5
2nd birth												
μ	13.6	14.5	14.0	13.2	12.8	13.0	13.0	12.9	12.9	12.7	12.5	12.6
sigma	6.97	7.47	7.15	6.25	6.15	6.18	5.95	5.67	5.80	5.31	5.34	5.32
k^*	0.063	0.078	0.071	0.061	0.066	0.063	0.079	0.092	0.085	0.068	0.080	0.074
$\mu + 1/k^*$	29.5	27.3	28.1	29.6	28.0	28.9	25.7	23.8	24.7	27.4	25.0	26.1

μ—mean length of the period of nonsusceptibility to conception.

sigma—standard deviation of the period of nonsusceptibility.

k^*—monthly probability of conception.

$1/k^*$—mean time to conceive.

There are several clues that make variations in contraception or induced abortion an unlikely basis for observed differences and trends in the distribution of the time to conceive. The time paths of marital fertility at marriage durations of 0–4, 5–9, 10–14, and 15–19 years are quite parallel until 1969, after which fertility at all durations, except 0–4, declines steeply. Reduction of fertility at higher durations of marriage is the expected pattern when deliberate control is initiated. Feeney (1987) has calculated annual parity progression ratios—the proportion of women progressing from having had *n* children to having *n* + 1 according to the observed rate of childbearing during the period among women at different marriage durations since the *n*th birth. These ratios do not begin a systematic decline at parities two and above until the late 1960s, and the progression ratio from birth one to birth two does not fall until 1979.

In the absence of contraception, the duration of the period of nonsusceptibility is usually dominated by the length and intensity of nursing. Resumption of menstruation and ovulation is postponed if a child is fed at the breast consistently and frequently. Supplementary feeding with nutrients other than mother's milk increases the chance that ovulation will resume. The virtually constant value of the mean duration of nonsusceptibility following the first birth in each period until the 1970s implies that supplementary feeding began at about the same time after the first birth from the 1940s to the 1960s; but in all periods supplementation evidently began a month or two later for a second child. There seem to be no systematic differences in the timing of the start of supplementary feeding of males and females.

The monthly probability of conception, *k**, for susceptible couples is very low compared with the risk of conception in the absence of contraception found in more developed countries. Typical values of *k** for contemporary Western populations are from .15 to .25. When D'Souza (1971) fitted the convolution of normal and exponential distributions to interbirth intervals in 19th century German villages, the estimated value of *k** ranged from .16 to .25. However, probability of conception as low as in China is found in the carefully observed population in the Cholera Research Laboratory in Bangladesh (Menken 1975).

The low values of *k** and the uniformly higher monthly probability of conception following a female birth might be explained by the effect of breastfeeding on fecundability after the mother has resumed menstruation. The possibility of such an effect was mentioned some years ago, but was only indirectly inferred (Jain et al. 1979). Recent research in Bangladesh shows clearly lower conception rates among women who have resumed menstruation, but are still nursing a child, compared with menstruating women who are *not* breastfeeding (John et al. 1987). The higher rates of conception following a female birth in China might also be the result of continued breastfeeding after menstruation has resumed. If the nursing of male children after menstruation resumes is more prolonged, or more frequent, or both, this difference would cause a lower monthly rate of conception when the most recent birth was male. The absence of any sex-related difference in the mean duration of susceptibility implies that supplementation begins at about the same time for male and female babies.

Reduced frequency of pregnancy wastage may contribute to the reduction in the mean duration of the dead period from the 1960s to the 1970s, and also to the reduction in its standard deviation.

The Monthly Probability of Conception after Marriage

We have assembled further data on conception rates by tabulating the intervals between marriage and first birth after marriages in rural China that occurred in the same time periods (1944–46, 1951–53, 1963–65, and 1970–72) treated in the analysis of interbirth intervals. The proportion of couples (among those ultimately having a first birth) who have not conceived at successively longer intervals after marriage is shown in Table 2. The entries in this table are analogous to the proportion surviving, l_x/l_0, in a life table. Separate columns are shown for women who were married when younger than 18 years of age, between ages 18 to 20, and when older than 20 years of age, to separate out the change in fecundability from the 1940s to the 1970s associated with the diminishing fraction of very early marriages. The monthly probability of conception in successive intervals after marriage is shown in Table 3. Note the decline in conception rates in every column from the first month to the remainder of the first half year, and then to the second half of the first year after marriage.

The most surprising feature of the conception rates shown in Table 3 is how low they are. In each time period the average rate of conception in the first year after marriage among women married after age 20 is very close to the estimated conception rate (among susceptible couples) following the first birth (Table 4).

Fecundability following marriage is as low as our estimates of the rate of conception of susceptible women after their first births and can scarcely be explained by the effect of continued breastfeeding.

The explanation for such low fecundability in the interval following marriage may lie in traditional Chinese beliefs and customs. Numerous books that give advice on health recommend that frequent sexual intercourse be avoided. Coital frequency of twice per week or less is prescribed for men younger than 30 and lower frequency is recommended for older men. Advice of this sort dates back many centuries and can be found in a popular book of the Tang Dynasty. It is related to a belief that one drop of sperm equals 10 drops of blood (Wu 1961; Huang 1971; Luo 1976; Ma 1954).

Table 2. Proportion of couples (per 1,000) who ultimately had a live birth, but had not experienced conception leading to a live birth by t months after marriage: Rural China

	Date of marriage											
	1944–46			1951–53			1963–65			1970–72		
	Age at first marriage			Age at first marriage			Age at first marriage			Age at first marriage		
t	< 18	18–20	> 20	< 18	18–20	> 20	< 18	18–20	> 20	< 18	18–20	> 20
0	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1	964	933	913	943	918	863	932	902	845	919	890	842
6	848	742	680	759	683	590	727	644	556	702	603	524
12	733	584	515	591	482	406	548	452	373	515	406	334
24	526	356	301	354	253	209	313	219	174	257	174	135
36	377	227	196	222	150	127	174	114	93	142	88	64
48	261	152	142	145	92	85	96	62	50	81	46	35
120	41	27	25	32	20	13	8	7	6	3	2	1

Table 3. Average monthly probability of conception (per 1,000) leading to a live birth: Rural China, various intervals after marriage

Months after marriage	Date of marriage											
	1944–46			1951–53			1963–65			1970–72		
	Age at first marriage			Age at first marriage			Age at first marriage			Age at first marriage		
	< 18	18–20	> 20	< 18	18–20	> 20	< 18	18–20	> 20	< 18	18–20	> 20
0–1	37	70	91	59	86	147	70	103	168	84	117	172
1–6	26	46	59	43	59	76	50	67	84	54	78	95
6–12	24	40	46	42	58	62	47	59	67	52	66	75
0–12	26	45	55	44	61	75	50	66	82	55	75	91
12–24	28	41	45	43	54	55	47	60	69	58	71	75
24–36	28	37	36	39	44	42	49	54	52	49	60	62
36–48	31	33	27	35	41	33	50	51	52	47	51	50
48–120	26	24	24	21	21	26	34	30	31	44	48	45

Table 4. Average conception rates following marriage and first birth: Rural China

Date of marriage or first birth	Average rate of conception in first year of marriage, women married at age 20+	Average rate of conception (of susceptible women) after first birth
1944–46	0.055	0.057
1951–53	0.075	0.069
1963–65	0.082	0.090
1970–72	0.091	0.085

Another factor contributing to low fecundability after marriage may be a traditional form of marriage, called "delayed transfer marriage," that is found in some parts of China. In such marriages, the bride returns to her parental home after one night with the groom. Visits occur only on special occasions for a year, two years, or more. After the woman becomes pregnant, or certainly after the birth of the first child, the couple lives together (William Skinner, personal communication; Ma 1981; Ruan 1982; Wang 1981). We are left then with a set of conjectural reasons (essentially, customs of spouse separation and traditions of low coital frequency) to explain why the probability of conception is so low following marriage and when susceptibility is resumed after a live birth, in addition to the speculation that breastfeeding continues after menstruation resumes.

The Distribution of Durations of Interbirth Intervals Following the Births of Children Who Died before 1982

The effect of the early death of a child on the duration of the interval to the next conception is well known. In examining demographic data from old parish registers, Gautier and Henry (1958) found a monotonic relation between age at death and duration of the subsequent interbirth interval, with the shortest intervals following deaths of children under one month of age, and the longest after deaths at 12 months or later. This relation gave strong indirect support to the idea that breastfeeding prolongs the period of anovulation.

It is for this reason that we have given separate consideration to the distribution of conception times following births of children still alive in 1982 and the distribution of intervals following births of children who did not survive. Unfortunately, the survey contains no information on age at death of children who died before 1982.

The distribution of intervals to the next birth following first births of children who did not survive to 1982 is a mixture of the distribution of intervals following births of children who died in infancy (less than one year of age) and the distribution of intervals following the birth of children who died at ages greater than one year. This relation is expressed in Equation (1),

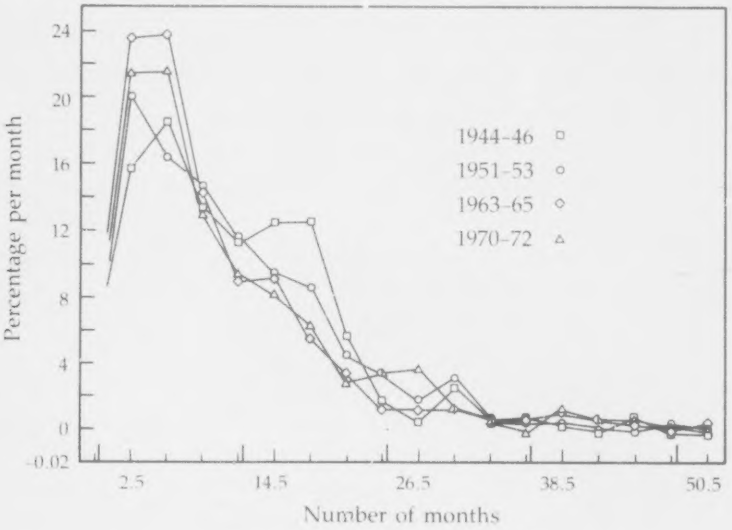
$$f_d(d) = wf_i(d) + (1 - w)f_s(d) \qquad (1),$$

where $f_d(d)$ is the proportion of intervals of duration d following first births of children who died before 1982, $f_i(d)$ is the proportion of intervals of duration d following first births of children who died in infancy, and $f_s(d)$ is the proportion of intervals of duration d following first births of children who died after reaching age 1.0. The proportion of those who died before 1982 who died in infancy is w. We assume that $f_s(d)$ is the same as the distribution of intervals following first births of children who survived to 1982. Equation (1) can be rewritten as

$$f_i(d) = (1/w)f_d(d) - [(1/w) - 1]f_s(d) \qquad (2).$$

The two distributions on the right-hand side of Equation (2) are known; hence $f_i(d)$ can be calculated if there is a valid estimate of w. (The estimation of w is described in the mathematical section of this paper.) Constructed estimates of $f_i(d)$ are shown in Figure 19.

Figure 19. Estimated distribution of the time to conceive following the birth of a first child who died in infancy: Rural China, various time periods



The Distribution of Intervals to the Third Birth Following Second Births of Children Who Died before 1982

Estimates of the distribution of intervals from the second to the third birth when the second-born died in infancy were calculated using Equation (2). The value of w was assumed to be equal to the value calculated for estimation of the distribution of $f_i(d)$ following first births, in the given time period. The resultant estimates are shown in Figures 20–23. Each distribution follows the pattern of $f_i(d)$ in the interval from birth one to birth two for approximately the first 16 months, but then reaches a second peak at about 22 months. (The distribution in the 1970s may be affected by contraception.)

Since the parameter w is an estimate of the proportion of children who died in infancy among those known to have died between birth and 1982, the parameter is assumed to be the same for first and second births that occur in the same time interval. The estimation of $f_i(d)$ for the interval from first to second birth yields an acceptable unimodal pattern, yet the same estimating equation with the same w produces a second mode in the distribution of interval lengths between the second and third birth. (Compare Figures 20–23 with Figure 19.) Can this second mode be real? What could cause a significant fraction of delayed conception following the death of a second child that would not cause an equivalent delay following the death of a first child?

The second peak in the distribution of $f_i(d)$ following second births is the result of resumed nursing of the first child when the second child dies in the first month or two of life. Some mothers, having lost a second child, resume nursing whereas others do not. Thus the $f_i(d)$ distribution following the infant death of a second-born child is a mixture of a distribution like that for the first interbirth interval (the mother of a first-born child, of course, cannot resume nursing of a sibling) and a distinct distribution with a later peak (but not as late as when the second-born survives to 1982) when the mother does resume nursing the first-born.

One can imagine a dual motivation for nursing an older child when a newborn dies soon after birth. First, the woman may find emotional relief from the loss of the baby in nursing a young sibling; second, the supply of milk for the dead infant produces physical discomfort that is relieved by resumed nursing.

Resumed breastfeeding would postpone the return of ovulation, but nursing of an older child is terminated sooner than nursing of a surviving newborn. Thus the second mode occurs earlier than the single mode of birth intervals when the newborn survives to 1982. Because the mother is unlikely to continue nursing an older child past the resumption of menstruation, $f_i(d)$ for the interval from second to third birth includes few very long intervals.

Figure 20. Estimated distribution of time to conceive following the birth of a second child who died in infancy: Rural China, 1944–46

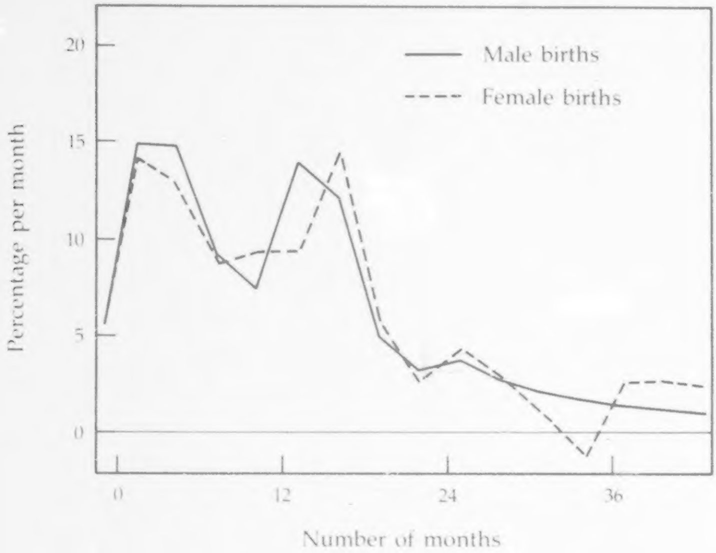


Figure 21. Estimated distribution of time to conceive following the birth of a second child who died in infancy: Rural China, 1951–53

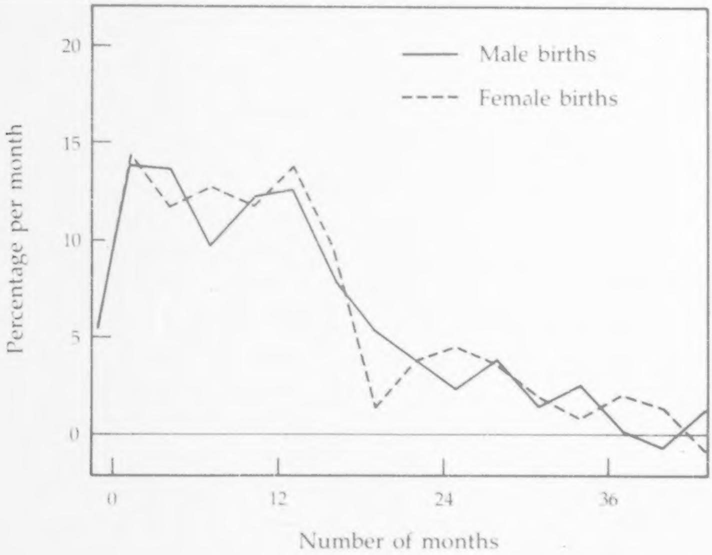


Figure 22. Estimated distribution of time to conceive following the birth of a second child who died in infancy: Rural China, 1963–66

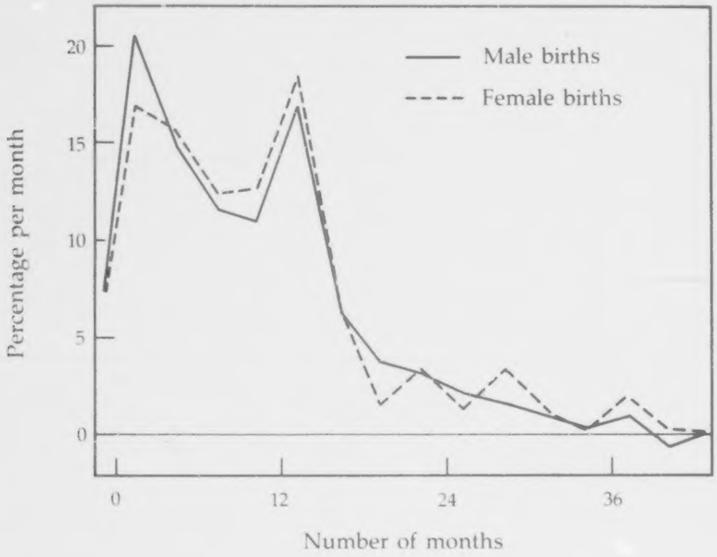
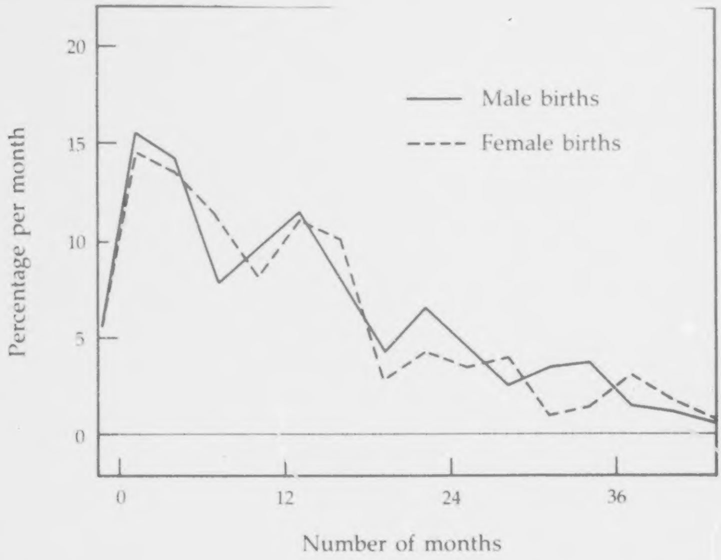


Figure 23. Estimated distribution of time to conceive following the birth of a second child who died in infancy: Rural China, 1970–72



We know of no direct observations in China of resumed nursing after an infant death. Perhaps anthropologists could obtain evidence of this practice by direct interrogation of older respondents. We are told by Jane Menken that such a practice is observed in Bangladesh.

THE MATHEMATICS OF THE MONTHLY DISTRIBUTION OF THE INTERVAL FROM BIRTH TO THE NEXT FRUITFUL CONCEPTION

Definitions and General Relations

Every live birth is preceded by a conception about nine months earlier; therefore the interval between a live birth and the next fruitful conception (the next conception leading to another live birth) equals the interval between the successive live births, less nine months. From the detailed fertility histories collected in China's One per Thousand Fertility Sampling Survey of 1982 we know the length of the interval between the first and second births for all women who had at least two live births, and between the second and third births for all women who had at least three live births. By subtracting nine months from each recorded interbirth interval, we ascertain the interval between each live birth and the next fruitful conception. In other words, if d is the time required (in months) for a fruitful conception after a given birth, and i is the interval (in months) to the next live birth, then $d = i - 9$.

For each couple, the time after a birth before the next (fruitful) conception is the sum of two segments. The first segment is the interval after a birth in which the couple is not susceptible to a fruitful conception. There are two kinds of such intervals: a simple interval in which the earliest conception is fruitful, and a compound interval in which one or more miscarriages or stillbirths postpone the next fruitful conception. The distribution of the duration of nonsusceptibility is the weighted sum of the distribution of simple and compound intervals.

The second segment of the time after a birth before the next conception is the interval between resuming susceptibility and experiencing a fruitful conception. During this interval the couple is subject to a monthly risk of conception.

We assume that the distribution of each of these constituent intervals is independent of the other. The distribution of the time to conceive is therefore the convolution of the distribution of these two constituent intervals.

No assumption is made about the form of the distribution of the duration of the period of nonsusceptibility. The proportion of couples whose nonsusceptibility lasts z months is designated as $g(z)$; $g(z)$ is estimated from the observed distribution, $f(d)$, of the intervals between birth and next conception, combined with an estimate of the mean monthly probability of conception, k^*, once susceptibility is established. The monthly probability of conception can be defined in two ways for couples who ultimately experience another live birth. We designate as $k(d)$ the proportion of couples among those who have not yet experienced a conception leading to a live birth at duration d after the preceding birth, who experience a conception at duration d. If we let $f(d)$ be the density function of fruitful conception at duration d, and let the proportion of couples who are yet to experience such a conception be $F(d)$, the probability of conception at d is $k(d) = f(d)/F(d)$, where $F(d) = \int_d^\infty f(y)\,dy$. $F(d)$ is analogous to l_x in a life table; since $l_x = \int_x^\infty d(y)\,dy$, the number of survivors at age x equals deaths at all ages above x. Just as the death rate, $\mu(x)$, is $-d(\log l_x)/dx$, $k(d)$ is $-d(\log F(d))/dd$.

A different monthly probability of conception can be defined for couples who are no longer in the period of nonsusceptibility after the preceding birth. For these couples the monthly risk of conception is indexed according to the duration of the time since susceptibility resumed. If $k^*(y)$ is the conception rate y months after susceptibility began, the proportion of couples who have not conceived x months after the initiation of susceptibility is $\exp\{-\int_0^x k^*(y)\,dy\}$, just as $l_x/l_0 = \exp\{-\int_0^x \mu(y)\,dy\}$.

The proportion of couples conceiving x months after becoming susceptible is $k^*(x)\exp\{-\int_0^x k^*(y)\,dy\}$.

The monthly probability of conception for all couples, $k(d)$, has duration d since the last birth as its argument, and all couples not yet having conceived (whether susceptible or not) in the denominator; the monthly probability of conception, $k^*(x)$, once a couple becomes susceptible, has as its argument the time x since susceptibility began and includes only the susceptible in the denominator.

As stated earlier, the distribution of the interval, d, between a live birth and the next fruitful conception is the convolution of the distribution of the duration of the period of nonsusceptibility, which we call $g(z)$, and the distribution of the time to conceive once susceptible.

Specifically,

$$f(d) = \int_0^d g(x)k^*(d-x)\exp\left(-\int_x^d k^*(d-y)\,dy\right)dx.$$

If the probability of conception of the susceptible is constant from month to month,

$$f(d) = \int_0^d g(x)k^*\exp(-k^*(d-x))\,dx,$$

where here $k^*(d - x)$ denotes multiplication of k^* by $d - x$, rather than functional notation as above; or

$$f(d) = k^* \exp(-k^*d) \int_0^d g(x) \exp(k^*x)\, dx.$$

The derivative of $f(d)$, when k^* is constant, is

$$f'(d) = -(k^*)^2 \exp(-k^*d) \int_0^d g(x) \exp(k^*x)\, dx + k^* \exp(-k^*d) g(d) \exp(k^*d);$$

hence

$$g(d) = f(d) + f'(d)/k^*.$$

Calculation of Frequency Distributions

From the data on dates of birth obtained from the 1982 sample survey, we have distributions for rural China of the intervals between first and second births, and between second and third, when the birth initiating the interval occurred in 1944–46, 1951–53, 1963–65, and 1970–72. Separate distributions were tabulated when the initial child survived until 1982, and when it did not. Distributions of the intervals between a live birth and the next conception leading to a live birth have been created by subtracting nine months from each interbirth interval. The interbirth intervals were tabulated in three-month groupings above 10 months, i.e., the first interval was less than 10 months, and the remaining intervals were months 10 through 12, 13 through 15, ..., months 118 through 120, and 121+. Hence the intervals to next conception were tabulated as less than 1.0 month, 1–3, 4–6, ..., 109–111, and 112+. Using these data, we are able to calculate the frequency distribution of the time to conceive, $f(d)$; the monthly risk of conception, $k(d)$; the monthly risk of conception since becoming susceptible, $k^*(x)$; and the monthly proportion of couples becoming susceptible, $g(z)$.

We visualize the density of fruitful conceptions, $f(d)$, as a continuous time variable measured in months, of which we have readings $\int_0^1 f(d)\, dd$, $\int_1^4 f(d)\, dd$, etc. These readings, divided by the width of the interval, are approximately equal to $f(0.5)$, $f(2.5)$, etc. The proportion of couples who have not yet had a fruitful conception at duration d, which we call $F(d)$, is $\int_d^\infty f(y)\, dy$—the sum of proportions at all durations greater than d. The risk (among all couples who have not conceived) of conception at duration d is $k(d)$, which equals $(-d \log F(d))/dd$. The average risk of conception in the interval from d to $d + n$ is

$$k(d + n/2) = -[\log (F(d + n)/F(d))]/n.$$

We have used an n of nine months in calculating the risk of childbearing following the birth of a child who survived to 1982. Figures 1–4 show $f(d)$ for rural China in four time periods, and Figures 5–8 show $k(d)$ for the same periods.

If the average monthly risk of conception, $k^*(x)$, among susceptible couples x months after becoming susceptible is a constant function of x, then $k(d)$ rises from zero immediately after the preceding birth, and increases as more couples become susceptible, reaching a maximum of k^* at a duration d when all couples have become susceptible, and then remaining constant. If $k^*(x)$ declines as x increases, $k(d)$ still reaches a maximum at about d, then declines.

Heterogeneity in the Fecundity of Couples and Declining $k^*(x)$

The monthly probability of conception as a function of duration since first birth declines after month 27 in each period of occurrence after first birth (Figures 5–8). As we shall see, the nonsusceptible state has ended for virtually all couples this many months after the preceding birth, so that after $d = 27$, the monthly risk of conception pertains only to susceptible couples, and declining $k(d)$ implies declining $k^*(x)$. Until month 27, $k(d)$ increases as previously nonsusceptible couples become susceptible.

Declining $k^*(x)$ can arise from two indistinguishable sources. Individual couples may experience a declining risk of conception because (for example) of a declining frequency of intercourse, or individual couples may have unchanging fecundability, but the fecundability of different couples may differ. When the monthly probability of conception is very different for different couples, the more fecund conceive quickly, and the average monthly risk of conception of the remainder steadily declines.

We have calculated the decline in mean fecundability that would result from a flat (rectangular) distribution of $k^*(x)$ within the population at duration 28 months after the last birth. Such a distribution, with a difference of 0.11 between the highest and lowest monthly probabilities of conception, would lead to a decline in mean fecundability matching the observed decline from month 28 to month 52 after the first birth in 1970–72.

The Possibility of Approximately Constant Fecundabilty of the Susceptible

The large proportion of times to conceive beyond 52 months (birth intervals more than five years) may be the result of factors extraneous to the calculation of normal risks of conception. (The proportion of such long intervals is over 15 percent for first births in 1944–46, and a little below 5 percent for first births in 1963–65 and 1970–72.) Extraneous causes of very long conception times include the omission of births from the fertility histories, particularly for the earlier three periods. The masculinity of births (male births per female birth) was slightly higher in the earlier years, implying that some female births were omitted from the fertility histories; possibly some male births were also unreported. Thus some of the very long reported intervals between first and second births may in fact have been intervals between the first and the third births.

Very long conception times may have also been the result of military service, social or economic disturbances, or death of a spouse. The only marriages listed in the survey were first marriages. Some women must have been widowed and remarried, and any conception subsequent to the death of the husband must have been delayed.

If some of the very long times to conceive are caused by such special factors as those just mentioned, the overstatement of the number of conception times beyond 52 months would reduce the calculated monthly probability of conception $(f(d)/(\int_d^{\infty} f(d)\, dd))$ because of inflation of the number of conceptions still to occur. We have calculated the value of $k^*(x)$ on the assumption that the monthly risk of conception of susceptible couples is approximately constant. This assumption is self-justifying to a degree because of the very close fit of the calculated distribution of intervals (based on the assumption) to the recorded distribution of conception times.

When the monthly risk of conception (of the susceptible) is constant, and almost all couples have resumed susceptibility (after, say, 28 or 30 months since the most recent birth), the monthly rate of decline in the number of conceptions equals the monthly risk of conception. Under these conditions, the number still susceptible is declining at the monthly rate k^*, or $-d[\log F(d)]/dd = k^*$, and the number of conceptions is a constant times $F(d)$; hence $f(d)$ declines at a monthly rate k^*.

We have, for these reasons, estimated the monthly rate of conception of the susceptible by calculating the average rate of decrease in the monthly number of conceptions from 25 months to 52 months after the preceding birth; specifically, we estimated k^* as $[\log(\int_{25}^{40} f(d)\, dd / \int_{37}^{52} f(d)\, dd)]/12$, then calculated how many conceptions there would be beyond month 52 if there were not any very long intervals for the special reasons suggested earlier. On the assumption that k^* is constant, the number of times to conceive past 52 months relative to the number from 25 to 52 would be $\exp(-27k^*)/(1-\exp(-27k^*))$. The recorded number of conception times past 52 months exceeds the number so estimated by 53–65 percent among second conceptions following first births in rural China in 1944–46, 1951–53, 1963–65, and 1970–72. Finally, we corrected $F(d)$ at durations up to 52 months by subtracting the estimated number of "misleading" very long intervals, and recalculated the risk function, $k(d)$. The two sets of $k(d)$ values appear in Figures 9 and 10. In Figure 9 one can see the increase of $k(d)$ to a maximum at about 26.5 months as nonsusceptibility ends for virtually all couples, and then declines. We attribute the decline primarily to the excessive number of long intervals. When the estimated excess is subtracted, $k(d)$ increases to a maximum at about the same duration and then remains more or less constant (Figure 10), except for the conception risks following first births in the 1940s, where the data on conception times are comparatively erratic (Figure 1).

Estimation of the Distribution of the Duration of Nonsusceptibility, $g(d)$

According to a formula given earlier, the distribution of the duration of nonsusceptibility is $g(d) = f'(d) + f(d)/k^*$, where $f(d)$ is the distribution of the time to the next fruitful conception following a live birth, $f'(d)$ is the derivative of $f(d)$, and k^* is the constant risk of conception of the susceptible couples. The listed values of $f(d)$ show the number of times to conceive at a duration of less than one month, and then in successive three-month intervals.

In estimating $f'(d)$, we attempted to construct estimates of the derivative at the midpoints of the intervals <1, 1–4, 4–7, etc. For $f'(0.5)$, we used the average slope from 0.5 to 2.5, taking $f(2.5)$ as one-third of the times to conception lasting 1.0 to 4.0 months. To estimate $f'(2.5)$, we calculated the average slope from 0.5 to 5.5 months. At higher durations, we took the average of the slope from one interval below to one interval above the given interval, and the slope from two intervals below to two intervals above. In addition, to smooth out the irregularities in $f(d)$, especially in the earlier years, we employed a nine-month moving average to determine $f(5.5)$, $f(8.5)$, etc., before combining with the estimates of $f'(d)$.

The resultant estimates of $g(d)$ following the first births, are shown in Figure 11. In Figures 12–14 the calculated $g(d)$ distributions are compared with normal distributions having the same mean and standard deviation.

In D'Souza's pioneering analysis of the distribution of birth intervals in populations not practicing contraception, he postulated a model (after an exploratory analysis that suggested his choice) of a convolution of a normal and an exponential distribution, and found the parameters of the constituent distributions in various populations by maximum likelihood and minimum chi-squared procedures (D'Souza 1971). It is gratifying that numerical calculation of $g(d)$, without any assumption of the form, produces so nearly a normal curve. The suitability of D'Souza's model for the distribution of the time to conceive in China is strongly supported.

Distribution of Intervals Following the Birth of a Child Who Died before 1982

The death of a child under one year of age interrupts nursing and [illegible]uces a quicker resumption of susceptibility to conception, and also appears to be related to higher fecundability when a couple is susceptible. The time to the next conception following the birth of a child who died before 1982 is thus, on average, shorter than the corresponding interval following the birth of a child who survived to 1982. The only information on child mortality in the survey is whether or not each child listed was still alive in 1982. No age at death was reported. From the distribution of intervals from birth to the next conception following the birth of children who died and children who survived, we have estimated the fraction of each cohort (of first births only) who died before one year of age and the fraction who died from age 1.0 to whatever age was attained in 1982.

The distribution of time to conception following the birth of a child who died before 1982 is the weighted average of the distribution following the birth of a child who died before age 1.0, and the distribution following the birth of a child who died after age 1.0. We assume that the latter distribution is approximately the same as the distribution of intervals following the birth of a child who survived to 1982. In other words, we assume that the death of a child after attaining age 1.0 has no effect on the time to the next conception. Thus

$$f_d(d) = wf_i(d) + (1 - w)f_s(d),$$

where $f_i(d)$ is the distribution following the birth of a child dying in infancy, $f_d(d)$ is the distribution following the birth of a child who died before 1982, and $f_s(d)$ is the distribution of a child who survived to 1982. This equation can be solved for $f_i(d)$, giving

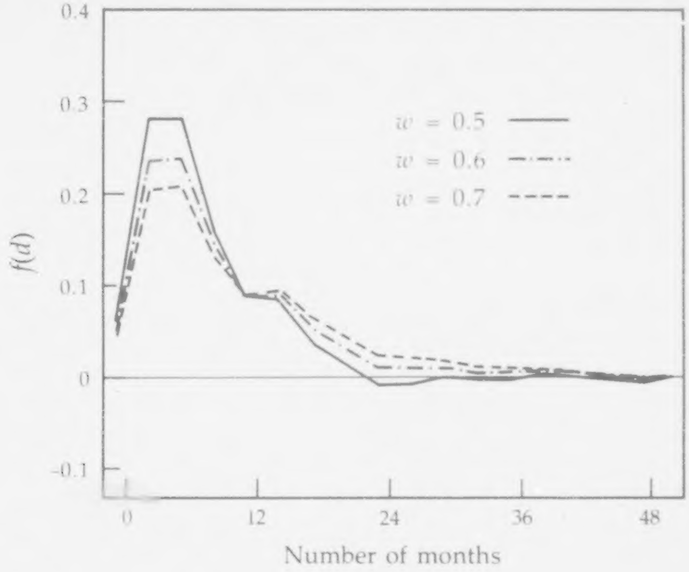
$$f_i(d) = (1/w)f_d(d) - [(1/w) - 1]f_s(d).$$

The proportion of children who died in infancy of those who died before 1982 is w. This equation shows how $f_i(d)$ can be estimated once a value of w is assigned.

Estimates of w of 0.5, 0.6, and 0.7 yield alternative calculated distributions of $f_i(d)$ following first births in 1963–65, as shown in Figure 24. Each of these three values of w yields an estimated distribution $f_i(d)$ with high proportions of conceptions in the intervals 1–4 and 4–7 months after birth, and a subsequent steep decline. This general structure of the distribution of time to conceive is as expected after an early death. The period of nonsusceptibility is very short (about 5 percent conceive in the first month). The steep decline in the proportion of intervals after the sixth month implies relatively high fecundability. We choose a value of w that produces the most acceptable estimated distribution of $f_i(d)$. The concentration of conception times in the short intervals and the steep decline of the distribution imply that only a small proportion of times to conceive should occur after 26 months. In Figure 24 it can be seen that a w of 0.5 produces estimated negative frequencies above 22 months, and that a w of 0.7 produces a substantial proportion of long conception times. We have settled on a rule that the chosen value of w is such that the proportion of conception times less than 52 months that lie between 28 and 52 months should be 4 percent. According to this rule, w satisfies the equation

$$w = [\textstyle\int_{28}^{52} f_s(d)\,dd - \int_{28}^{52} f_d(d)\,dd)]/(\int_{28}^{52} f_s(d)\,dd - 0.04),$$

Figure 24. Estimates of the frequency distribution of the time to conceive, $f(d)$, following the birth of a first child who died in infancy, with different values of w (proportion dying in infancy of those who died by 1982): Rural China, 1963–65



where the frequency distributions are truncated at 52 months. The rule yields an estimate of 0.59 for w associated with first births in 1963–65, very close to the w = 0.6 that produces the sensible looking $f_i(d)$ in Figure 24. The estimates of w for first births in 1944–46, 1951–53, 1963–65, and 1970–72 are 0.5, 0.52, 0.59, and 0.77, increasing at later dates as expected. The estimated proportion dying in infancy is higher than in the West model life tables that match the recorded proportion surviving from birth to the age attained in 1982. This difference is predictable, since mortality decreased sharply after the 1950s, so that mortality above age 1.0 was experienced in a time of lower risks of death than the time in infancy.

We have also estimated w (the proportion dying in infancy of those who died before 1982) for first births in individual years from 1956 to 1964 to help resolve an anomaly in the data on child survival in 1982. The proportion who died before 1982 by single calendar years of birth does not reach a maximum level of very high crude death rates during the crisis years, but rather a few years earlier (Figures 25 and 26). The reconciliation of these differences in timing is provided by the values of w (proportion dying in infancy of those who died by 1982). In the late 1950s, when the crude death

Figure 25. Comparison of the proportion of children born between 1956 and 1964 who died before 1982 with the crude death rate for the same years: Rural China

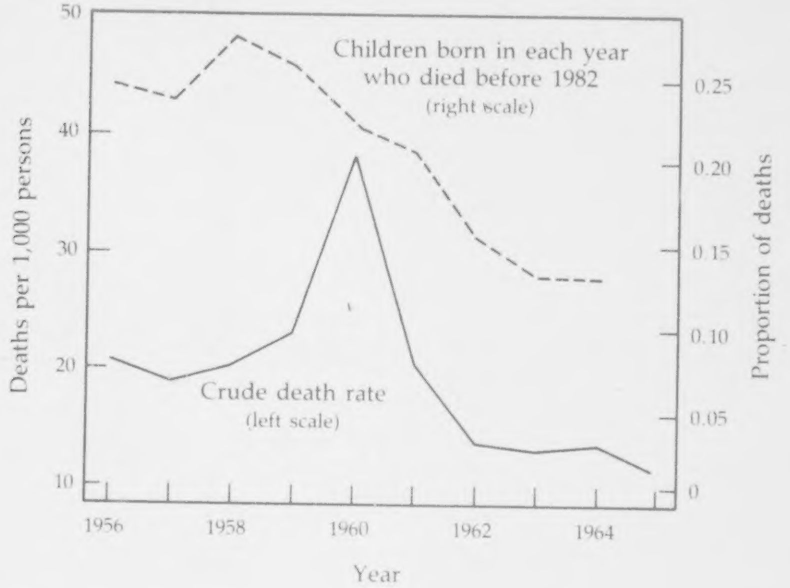
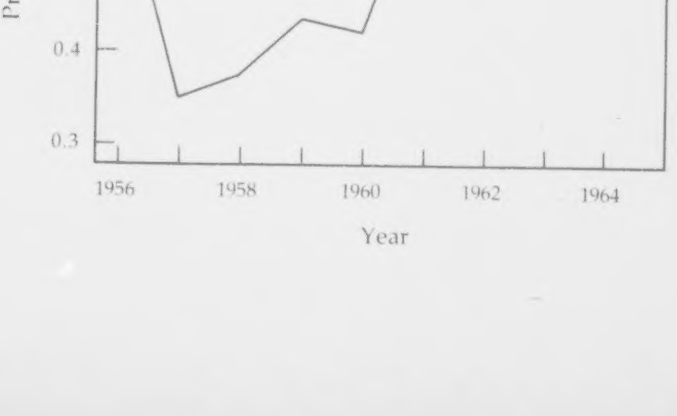


Figure 26. Estimated proportion, *w*, of children born between 1956 and 1964 who died in infancy: Rural China



rate was moderate but the proportion of children who died before 1982 was high, the value of *w* interrupted its secular increase to decline to very low values. It was not high infant mortality that caused high proportions dying before 1982 in these cohorts, but high mortality later on, doubtless in the crisis years of 1959 to 1961 when the birth cohorts of 1957 and 1958 were still less than five years old. Apparently the crisis had its greatest affect on the children past early infancy (children who had been weaned) rather than on children under age 1.0.

Another anomaly in survival rates inferred from the fertility survey is the uniformly higher mortality of second-born children than of first-born (Table 5). In Western populations the mortality of the first-born is usually higher than that of second children because the mother is younger, and because first deliveries are more difficult than second or third.

Table 5. Proportion of children who died before 1982: Rural China

	Male	Female	Total
1944–46			
1st birth	.367	.332	.350
2nd birth	.391	.380	.385
1951–53			
1st birth	.264	.240	.253
2nd birth	.267	.264	.266
1963–65			
1st birth	.141	.117	.130
2nd birth	.145	.133	.139
1970–72			
1st birth	.078	.069	.077
2nd birth	.101	.078	.084

CONCLUSION

This analysis shows how much can be inferred from such purely demographic information as precise birth histories for a large sample of respondents. We have been able to infer the relative timing of supplementation of mothers' milk for male and female infants, and for first and second births, and the relative extent of prolonged nursing of males and females. We have also estimated the proportion of children who died in infancy among those known to have died before 1982. Most surprising, we have been able to infer from these mere birth histories that many mothers in rural China have resumed nursing a living child when a new baby died.

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CONTENTS

PREFACE ix

ABSTRACT 1

HISTORICAL BASIS OF URBAN GROWTH IN NEPAL 5
- Urban Growth in the Kathmandu Valley 6
- Urban Growth Outside the Kathmandu Valley 8

URBANIZATION AND URBAN GROWTH IN NEPAL: 1952/54–1981 15
- The Nature of Settlement Distribution 15
- Patterns of Urban and Rural Population Growth 17
- Regional Levels of Urbanization 24
- Distribution and Growth of Urban Places 28
- Hill Towns 38
- Kathmandu Valley Towns 42
- Inner Tarai Towns 44
- Tarai Towns 45

DISTRIBUTION OF URBAN POPULATION BY SIZE CLASS OF URBAN CENTERS 48
- Shifts in Urban Size Classes 51
- Rank Hierarchy of Urban Places 54
- Urban Primacy 56

COMPONENTS OF URBAN GROWTH 56
- Reclassification and Urban Growth 59
- Migration and Urban Growth 59

CHARACTERISTICS OF URBAN POPULATION 69
- Age and Sex Composition of Urban and Rural Population 72
- Characteristics of Urban Migrants 75
- Literacy of Urban and Rural Population 81
- Activity Rates and Occupational Structure 82
- Growth of the Economically Active Population 85
- Employment Status of the Economically Active Population 88
- Occupational Structure of the Employed Labor Force 89
- Urban and Rural Incomes 93

FUNCTIONAL BASIS OF URBAN PLACES IN NEPAL 98

EVOLUTION OF THE SYSTEM OF URBAN PLACES IN NEPAL 105
  Commercial/Trade Significance of Urban Places 108
  The Gateway Hypothesis of Urban Development 113
  The Nepalese Case 114
  System of Urban Places in Nepal 118

EMERGING TRENDS 120

URBANIZATION AND MIGRATION POLICIES 127
  Expansion of Transport Network 127
  Resettlement and Migration 128
  Regional Development 130
  Urbanization Policies in the Seventh Plan (1985-90) 134

POLICY IMPLICATIONS AND AREAS FOR RESEARCH 135
  Urban Statistical Base 136
  Urbanization and Spatial-Economic Development 139

REFERENCES 151

FIGURES AND MAPS

FIGURES

1. Regional trends in urbanization level of Nepal: 1952/54–1981 *26*
2. City size distribution in Nepal: 1952/54–1981 *50*

MAPS

1. Important localities in Nepal in relation to Indian railheads in the 1950s *12*
2. Regional divisions of Nepal *18*
3. Distribution of urban places in Nepal: 1952/54 *29*
4. Distribution of urban places in Nepal: 1961 *35*
5. Distribution of urban places in Nepal: 1971 *36*
6. Distribution of urban places in Nepal: 1981 *37*
7. Distribution of urban places in Nepal and contiguous districts in India: 1981 *116*
8. Road network and system of urban places in Nepal: 1981 *119*
9. Urban places in Nepal: 1982 *122*
10. Spatial strategy for regional development proposed in the Fourth Plan: 1970–75 *132*

TABLES

1. Important localities in the Tarai: 1952/54 *14*
2. Percentage distribution of population and number of localities/*panchayats* by size of locality: Nepal, 1952/54–1981 *16*
3. Total population, urban and rural population, and growth rates of urban and rural population by geographical region: Nepal, 1952/54–1981 *20*
4. Regional levels of urbanization: Nepal, 1952/54–1981 *25*
5. Districtwise percentage of population urban: Nepal, 1971 and 1981 *27*
6. Population, intercensal change, and annual growth in designated urban localities: Nepal, 1952/54–1981 *30*
7. Population and intercensal growth rate of localities designated urban in 1981 *40*
8. Distribution of urban population by size class by geographical region: Nepal, 1952/54–1981 *49*
9. Urban growth rate by size class of urban centers: Nepal, 1952/54–1981 *52*
10. Shifts in size class of urban places: Nepal, 1952/54–1981 *53*
11. Changes in rank hierarchy of urban places: Nepal, 1952/54–1981 *54*
12. Ratio of actual to expected population size for urban areas: Nepal, 1952/54–1981 *55*
13. Measures of primacy: South Asia *57*
14. Sources of intercensal growth of urban population *58*
15. Reclassification and urban growth: Nepal, 1952/54–1981 *60*
16. Interregional migration, total and urban: Nepal, 1971 *62*
17. Interregional migrants and foreign-born population in urban areas: Nepal, 1971 64
18. Foreign-born and internal migrants in urban areas: Nepal, 1981 *66*
19. Regions of origin of internal migrants to urban areas: Nepal, 1981 *70*
20. Percentage of population in different age groups, urban and rural: Nepal, 1961–81 72
21. Dependency ratio of urban and rural population: Nepal, 1961–81 73

22. Dependency ratio in urban localities: Nepal, 1971-81 *74*
23. Age-specific urban and rural sex ratios: Nepal, 1961-81 *75*
24. Sex ratio and median age of urban population: Nepal, 1961-81 *76*
25. Median age of urban and rural population: Nepal, 1961-81 *77*
26. Sex ratio of migrants to urban areas: Nepal, 1971-81 *78*
27. Duration of stay of urban migrants in present place of residence: Nepal, 1981 *79*
28. Reasons of stay in present place of residence for urban migrants: Nepal, 1981 *80*
29. Urban and rural literacy: Nepal, 1961-81 *82*
30. Percentage literate (6 years of age and over) in urban localities: Nepal, 1971-81 *83*
31. Literacy rate of population (6 years of age and over) in urban and rural areas in districts with urban places: Nepal, 1981 *84*
32. Growth of economically active population (10 years of age and over) in urban and rural areas: Nepal, 1971-81 *85*
33. Crude and refined activity rates of economically active population (10 years of age and over) in urban localities: Nepal, 1971-81 *86*
34. Reasons for economically inactive population (10 years of age and over) in urban and rural areas: Nepal, 1981 *88*
35. Employment status of economically active population (10 years of age and over) in urban localities: Nepal, 1971-81 *90*
36. Occupational structure of population, urban and rural: Nepal, 1961-81 *92*
37. Occupational structure of classified economically active male population in urban areas: Nepal, 1952/54-1981 *94*
38. Occupational structure of the male population in urban and rural areas: Nepal, 1986 *96*
39. Urban and rural incomes: 1977 *97*
40. Urban employment of classified economically active population by major industry groups: Nepal, 1971-81 *98*
41. Percentage distribution of classified economically active male population in industry groups in urban areas: Nepal, 1971 *100*
42. Percentage distribution of classified economically active male population in industry groups in urban areas: Nepal, 1981 *102*

43. Functional classification of Nepalese towns: 1971-81 *106*

44. Major highway projects and their relation to urban areas: 1983 *110*

45. Percentage share of urban-based offices in collection of sales tax, total tax, and sales tax from customs: Nepal, 1980-81 *112*

46. Projections of urban population: Nepal, 1981-2001 *124*

APPENDIX TABLES

1. Urban information that can be derived from censuses of Nepal: 1952/54-1981 *146*

2. Criteria used in designating urban localities in different census years: Nepal, India, Bangladesh, Pakistan, and Sri Lanka, 1950-81 *148*

PREFACE

This report was prepared during my six-month-long fellowship at the East-West Population Institute, in 1985–86. Partial support for this publication was provided through a grant from the National Commission on Population Secretariat, His Majesty's Government of Nepal, to the East-West Population Institute.

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This work is dedicated to the everlasting memory of my beloved sister Bimala.

ABSTRACT This paper draws mainly on census data to document and analyze the patterns, processes, and characteristics of urbanization and urban growth in the predominantly agricultural and underdeveloped situation in Nepal. From the early 1950s to 1981, urban growth in Nepal was relatively rapid, although the level of urbanization remained very low. The prevailing political economy and the hilly and mountainous terrain inhibited urban growth until the 1950s. The opening of the Tarai and the Inner Tarai following the eradication of malaria in the 1950s unleashed a redistribution of population from the agriculturally less productive and environmentally strained Hill region to the Tarai lowlands. Since then, rural Hill to rural Tarai migration has been predominant.

In recent decades urbanization has mainly characterized the Tarai region in Nepal. Nepal's increasing commercial ties with India, the existence of an open border with India, and the gradual expansion of the productive apparatus of the Tarai have all contributed to the rapid urban growth of the last decade.

In Nepal's political–economic context the Tarai border towns are also the spatial manifestations of Nepal's economically dependent status vis-à-vis India. The Tarai border towns acting as primary gateways to the Hill hinterland (and the foothill towns acting as secondary gateways) have oriented the evolution of urban places in Nepal. Urban growth in general has been contingent on the expansion of the road network and the state bureaucracy.

The rapid rate of population growth will continue to affect urbanization and urban growth in Nepal. As the scope for rural Hill to rural Tarai migration decreases, urban-oriented migration is likely to rise rapidly in the future. If present trends continue, the Tarai region will experience relatively rapid urban growth. As a result, imbalances in spatial-economic development between the Hill and the Tarai regions are bound to grow. This trend will have far-reaching implications for the development of the Hill as well as the Tarai settlement system.

Though the demographic and socioeconomic characteristics of urban areas show distinct differences from those of rural areas, census data indicate that the differences are narrowing. Primary activities remain predominant in many urban areas. Tertiarization of the urban occupational structure is, however, a visible characteristic of Nepalese urbanization. The rudimentary urban data base, definitional problems, and periodic reclassification of urban areas pose fundamental problems in the analysis of Nepalese urbanization.

State policies bearing on urbanization and migration have had little effect on population redistribution. Spatial and nonspatial policies have not been clearly formulated and implemented; nor have they been consistent. Creation of a better urban statistical base and a better appreciation of the links between urbanization, migration, and development in Nepal are clearly warranted.

Nepal is one of the least developed and least urbanized countries in the world. In 1981 nearly 62 percent of the country's gross domestic product (GDP) was derived from the agricultural sector and nearly 93 percent of the labor force was in agriculture. This overwhelming dependence on agriculture is reflected in the extremely low level of urbanization. In 1981 a bare 6.4 percent of the country's 15 million people lived in designated urban areas. Nepal's neighbors in the subcontinent—India (23.7 percent), Bangladesh (15.2 percent), Pakistan (28.3 percent), Sri Lanka (21.5 percent)—all had urbanization levels in excess of 15 percent in 1981. Compared with other countries of the subcontinent, urbanization in Nepal, in terms of the rise in the proportion of the total population living in designated urban areas (Davis 1965:3), is a recent phenomenon.

Despite the low levels of urbanization, the rate of urban growth in Nepal has been faster in recent decades than previously. Urbanization, seen as a determinant as well as a consequence of economic development, is a complex, multidimensional process. The implications of rapid urban growth for development and for the redistribution of population are, therefore, manifold. It is in this context that this study seeks to document and analyze the process, characteristics, and trends of urban growth and urbanization in Nepal.

The data and definitional problems in the study of Nepal's urbanization are considerable, as we shall see in the following paragraphs. The succeeding section discusses the historical basis of urban growth in Nepal in order to put the contemporary urban growth process in perspective. I then trace urban growth in Nepal since the 1952/54 census at the national, regional, and urban locality levels and assess the components of urban growth. After outlining the characteristics of Nepalese urbanization in terms of available demographic and socioeconomic information, I then discuss the functional basis of Nepalese urban areas in an effort to highlight the nature of the evolving system of urban places. The emerging trends of urban growth and urbanization in Nepal are then sketched. In the final two sections I deal with aspects of development policies that have a bearing on the urbanization and migration process in Nepal and the implications for policy and research that emanate from my analysis.

The study is based primarily on available census data, but I have used relevant secondary sources of information wherever possible. Census information on urban areas in Nepal is strictly limited and not always comparable (Appendix Table 1). Reference to urban population for the nation as a whole was first made in the 1952/54 census, the first modern census ever conducted in the country. The 1952/54 census provides additional information on the three major towns of the Kathmandu Valley only. The 1961 census presents selected, but not always pertinent, demographic and socioeconomic information on urban population but only at the regional level.

Though these data have been used for the regional analysis of the urbanization process, the 1961 regions are only broadly comparable to the regions defined in successive censuses. This is because of the periodic changes in the boundaries of districts that comprise the regions. Data at the urban locality level are provided both in the 1971 and the 1981 censuses. These data again are only broadly comparable owing to the periodic reclassification of urban boundaries, the extent of which cannot be statistically determined. One of the most serious lapses in Nepalese urban data pertains to urban migration. Though migration data are provided in the 1971 and 1981 censuses, these are neither exhaustive nor comparable. The urban data base in Nepal is, therefore, not only very weak but also incomparable and often inconsistent.

There is as yet no clearly stated and comprehensive definition of an urban area in Nepal. The 1952/54 census listed 10 "prominent localities with a population of over 5,000." These were considered urban localities in the 1952/54 census. The first formal definition of an urban area was provided in the 1961 census. A town *(sahar)* by definition was "an area with a population cluster of 5,000 and over with an urban environment such as high school, college, judicial and administrative offices, bazaar, communication facilities, mills, factories, etc." (Nepal, CBS, 1967: pt. 1, p. 62). All together 16 localities meeting these criteria were designated as urban localities *(sahar)* in 1961. A careful look at the explanatory notes provided in the 1961 census reveals that boundaries of some urban areas were reclassified during the intercensal period.[1]

The Nagar Panchayat Act of 1962 changed the nomenclature of designated urban areas from "*sahar*" to "*nagar panchayat.*" The country was divided into local-level administrative units or *panchayats.* The *nagar panchayat* became an urban administrative unit as distinct from the *gaon panchayat,* which was a rural or village administrative entity. The act also stipulated a population size criterion of "not less than 10,000" as a generally necessary but, as it turned out, not a sufficient condition for a locality to receive municipal or *nagar panchayat* status. Not all areas designated urban in 1961 received municipal status. Since 1962 all *nagar panchayats* ipso facto have been considered formal urban areas in Nepal. Moreover, since 1962 an urban area in Nepal is interpreted not as a settlement unit per se but as a unit of local self-government.

A total of 16 localities were designated as *nagar panchayats* in 1971. Five localities classified as urban in 1961 were declassified and five new localities were inducted as *nagar panchayats.* The arbitrary nature of classification was evident in the fact that while the five declassified areas had a population of less than 10,000, four areas designated as urban in 1971 had a population of less than 10,000.[2]

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[1] Compared to 1952/54, for example, the municipal limits of Biratnagar were extended in 1961 while those of Birganj were reduced (Nepal, CBS, 1967: pt. 1, p. 62).

Unlike the 1952/54 or the 1961 censuses, settlement configurations were not the basic units of census enumeration in 1971. The *panchayat*, the basic unit of census enumeration in 1971, provides no idea of the distribution of population by settlements per se because the areal extent as well as the population size of *panchayats* is based on predetermined regional criteria. The areal extent of a *panchayat* varies considerably among different regions of the country and consists of a number of settlement units. The 1971 census reveals that 12 *panchayats* with a population over 10,000 did not receive municipal status.[3] The 1971 census itself does not provide a formal definition of an urban area.

Further change in the population size necessary for a *nagar panchayat* was made in 1976. Accordingly, the minimum population size was fixed at 9,000. Implicitly, all regional development centers and zonal headquarters were to be provided municipal status. Thus Dhankuta and Surkhet were provided municipal status. Similarly, 11 of the 14 zonal headquarters also received municipal status. Some of these did not have municipal status in 1971. The 1981 census classified 23 *panchayats* as *nagar panchayats*, all of which had a population of over 9,000. However, the census also reveals that excluding the *nagar panchayats* a total of 123 "localities" (so called in the census, but these in effect are *panchayats*) had a population of over 10,000 in 1981. In 1983 six new *panchayats* were reclassified as *nagar panchayats*, bringing the number of urban areas in Nepal to 29. No information, with the exception of population size, is available on these six new *nagar panchayats*.

Test criteria such as population density or occupational structure have never been used in designating or defining urban areas in Nepal. In fact the areal extent of *nagar panchayats* does not appear in any of the census publications. The decision regarding the designation of the *nagar panchayat* does not rest with the Central Bureau of Statistics. For all practical purposes it is the Ministry of Panchayat and Local Development that designates a

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[2] The five declassified localities with a population of less than 10,000 in 1971 were Banepa, Thimi, Kirtipur, Malangwa, and Matihani. Localities with a 1971 population of less than 10,000 but provided municipal status were Ilam, Rajbiraj, Bhadrapur, and Tansen.

[3] The 12 localities with populations over 10,000 but not considered urban were: Shivganj, Jhapa (17,891); Bhokraha, Sunsari (16,835); Damak, Jhapa (13,993); Hatiya, Makwanpur (12,939); Topgachhi, Jhapa (11,960); Phaparbari, Makwanpur (11,904); Madhumalla, Morang (11,292); Mahendranagar, Sunsari (10,952); Gaurdaha, Jhapa (10,930); Jayapur-Budhabare, Jhapa (10,533); Bahundagi, Jhapa (10,284); and Rajghat, Morang (10,049). Ten of these localities are in the Eastern Tarai and two are in the Central Inner Tarai. See Nepal, CBS (1975: vol. 1, table 3).

panchayat as a *nagar panchayat*. Further, the areal extent of an urban area is not bounded by contiguity criteria. *Nagar panchayat* population therefore does not necessarily reflect the population of a contiguous built-up area. The *panchayat* boundary is not fixed, either. In 1971, for example, there were 3,931 *panchayats* in the country. In 1981 the number was 2,935. At present there are 4,051 *panchayats* in Nepal. After the constitutional amendment of 1975 considerable tracts of outlying rural areas were annexed into *nagar panchayats*. There is, however, no statistical basis to identify the effect of reclassification on the population size of urban areas. The concept of *panchayat* as a political, administrative, and census enumeration unit has made the identification of settlements as functional units extremely difficult—and almost impossible on the basis of census data.

The definition of urban places in Nepal is restricted by the population size criterion and the political/administrative process involved in the designation of *nagar panchayats*. As a consequence the array of small towns, market and trade centers along transportation routes, and centers of religious and cultural importance that perform intermediate and lower-order central place urban functions are effectively excluded from the urban category. Even in designated urban areas the lack of regard for contiguity, density, and occupational structure, as well as the frequent changes in urban boundaries, seriously obfuscate an understanding of the growth and character of urban places, and therefore the process of urbanization, in Nepal. Some of these inconsistencies appear to be present in various forms in other countries of the region as well (Appendix Table 2). It is clear, however, that the areas designated as urban do not reflect the total distribution of functional urban places in Nepal.

HISTORICAL BASIS OF URBAN GROWTH IN NEPAL

The process of urbanization has been seen as essentially related to specialization, industrialization, and consequent economic development (Davis and Golden 1954; Berry 1962; Sjoberg 1966). The exact form of this association in the historical context of developed and developing countries has remained controversial (Sovani 1964), but the structural shift in employment from agriculture to nonagricultural activities is generally considered as the most fundamental tenet of urbanization. Urbanization, therefore, is a territorial response to sectoral changes in the economy. Urbanization in this essential sense has hardly begun in Nepal (Conway and Shrestha 1980:477-78). It is thus of interest to look at the reasons that inhibited the process of urbanization in Nepal in a historical context.

Nepal is largely a nonindustrial society even today. Nearly 93 percent of the economically active population was engaged in agricultural activities in 1981. Manufacturing involved only 0.5 percent of the labor force.

Historically, urban growth in nonindustrial societies appears to have been made possible by four related conditions (Davis and Golden 1954; Davis 1955; Hauser 1965; Sjoberg 1969; Golden 1981):

- Highly favorable agriculture characterized by high productivity per unit as well as high productivity per capita
- Evolution of a highly structured social and territorial organization of power that facilitated the appropriation of agricultural produce and regulated its distribution to the urban population in some measure
- Some rudimentary form of technological growth that enhances the processing of agricultural products and the production of tradable commodities
- Conditions conducive to the growth of commerce

It is these conditions that merit our attention as we trace the historical basis of urban growth in Nepal.

Urban Growth in the Kathmandu Valley

Urban growth in Nepal, well up to the first quarter of the present century, appears to have been pretty much limited to the fertile valley of Kathmandu in the Central Hills. The "Kathmandu basin" probably represents a tertiary structural trough covered by fluvial and lacustrine sediments (Hagen 1961). The lacustrine deposits yield fertile hydrous soils and furnish building materials as well as fuel and fertilizer clay. The valley itself is comparatively small (30 by 17 kilometers maximum), but it is among the oldest settled areas in the central Himalaya (Depuis 1962:156–66).

The beginnings of urban growth in the Kathmandu Valley are hazy at best. The first sizable settlements in the valley probably evolved during the Lichchavi period (circa A.D. 300–800). However, it was only by the twelfth and thirteenth centuries that the three principal localities of the valley—Kathmandu, Patan (Lalitpur), and Bhadgaon (Bhaktapur)—acquired some semblance of urban character, that is, a relatively higher concentration of people and distinct organization of space (Slusser 1982:84–89; Malla 1978:34). The three cities of the valley were capitals of independent principalities until 1769.

The fundamental impulse for the sustenance of urban growth during the Malla period (circa A.D. 1200–1769) derived from the role the valley played as a center of entrepôt trade by virtue of its situation: The geographical position of the valley facilitated control of the passes in the contact zone between the Tibetan, Nepalese, and Indian cultural areas to the north and the south. At the same time, the valley's peripheral location in the mountains secluded it from the historic events that swept over the face of India (Haffner 1981–82:14).

Long-distance trade undoubtedly facilitated urban growth in the valley. Between 1480 and 1768 the valley towns effectively controlled Tibetan trade. Kathmandu traders developed sizable trade establishments in Lhasa. By the mid-eighteenth century the principality of Kathmandu had obtained exclusive rights to mint coins for circulation in Tibet. As entrepôt trade centers par excellence, the valley towns not only sustained the growth of an indigenous merchant class but also attracted trading houses from such places as Kashmir.

Supported by a productive agricultural base and spurred by the possibilities of long-distance trade, small-scale industrial production of textiles and metalware flourished in the valley towns. Gradually, a distinctive division of labor based on a complex social structure and occupational characteristics began to evolve (Regmi 1978:23). The Newars (the native inhabitants of the valley) distinguished themselves through the centuries as master architects, temple builders, wood carvers, goldsmiths, silversmiths, and casters of bronze and brass. By the eighteenth century elements of a genuine urban economy seem to have been in existence in the Kathmandu Valley.

The internecine conflicts among the petty principalities were, however, frequent. The principalities of the Kathmandu Valley in this period have been likened to a "cross between the warring city-states of ancient Greece and the trading towns of Southern Europe in the late medieval ages" (Regmi 1978:7). The scope for urban growth by this period, however, seems to have been effectively narrowed by several factors: the exigencies of the political situation, the need for a proportionate increase in agricultural labor to augment agricultural production and thus provide for the requirements of trade and a growing population, the lack of a large-scale nonagricultural production base, and the limited economic linkages with the hill hinterland. Taken together these constraints appear to have set a ceiling on urban growth in the Kathmandu Valley.

In 1769, the principality of Kathmandu, which had long attracted the attention of its zealous neighbors by virtue of its thriving commerce and natural environment, was conquered by the petty principality of Gorkha. The Gorkha conquest of the valley set the stage for the unification of the numerous hill states into present-day Nepal.

After 1769 Kathmandu became the capital of unified Nepal and therefore the seat of political, economic, and social power. The period between 1750 and 1850 was, however, extremely disruptive for the commerce of the valley due both to external reasons (the unification campaign, the Anglo-Nepal war of 1814–16, and the condition of guarded hostility that prevailed in Anglo-Nepali relations well up to 1846) and to internal reasons (excessive taxation and other obligations to the state). It is unlikely that even the total population of the country could have increased during that period (Poffenberger 1980:42).

Reliable figures for the population of the valley towns prior to 1952/54 are not available. Kirkpatrick, who visited the valley in 1793, estimated Kathmandu's population to be on the order of 50,000 (Kirkpatrick [1811] 1969:161). Oldfield estimated it to be between 60,000 and 80,000 (Oldfield [1880] 1974:108). These estimates, based on the number of houses, seem both vague and misleading (compare Chandler and Fox 1974:266).

Hodgson estimated that in 1831 goods worth 11.7 percent of the value of all imports from India were destined to Tibet through Kathmandu. Similarly, goods worth 36.8 percent of the value of exports to India were derived mainly from imports from Tibet (Hodgson [1874] 1971:91-121). The steady decline in trade with Tibet beginning in the latter half of the nineteenth century gradually eroded the earlier basis of urban growth in Kathmandu. The entrepôt trade center gradually lost its function. Although some urban growth appears to have taken place between 1850 and 1950, much of it was contributed by Kathmandu's growing importance as the political, administrative, and cultural capital of Nepal (Ranjitkar and Manandhar 1981:25-35).

The census of 1920, which was not a scientific census, puts the population of Kathmandu, Lalitpur, and Bhaktapur districts at 108,805, 104,928, and 93,176 respectively. The census of 1941, also not a scientific census, provides the population of the valley towns for the first time: Kathmandu (68,594), Lalitpur (34,685), and Bhaktapur (27,864) together had a total of 131,143 people living within the then recognized town limits.

Urban Growth Outside the Kathmandu Valley

The conditions that facilitated urban growth in the Kathmandu Valley did not exist in other parts of Nepal before or after unification. Other localities in the Hill/Mountain region had neither the locational advantages of the valley nor its supportive agricultural base, social organization, and control over substantive long-distance trade. The inhospitable malarial expanse of the Tarai to the south discouraged the growth of permanent markets of any size. A number of trading marts existed in the approaches to the Kathmandu Valley and other hill regions, both in the Eastern and the Western Tarai, but the conditions for permanent large settlements were absent.

Kirkpatrick describes Hetauda on the trail leading from the Indian plains to the valley as "the centre of all commerce carried between Nepaul and Vizier's as well as Company's western possessions" but a "miserable village containing 50-60 houses" (Kirkpatrick [1811] 1969:25). Hetauda had a population of 189 in 1954—over 150 years after Kirkpatrick's visit—and was as important to Kathmandu's commerce as in 1793! Buchanan, who toured rather extensively along the Tarai in the first decade of the nineteenth century gathering trade statistics for the East India Company, mentions Butwal (in the foothills of the Central Tarai through which all trade links with the Central Hills were maintained) as a "considerable mart" (Buchanan [1819] 1971:180). Butwal had a population of 2,597 in 1954. Dolakha and Nuwakot in the Eastern and Central Hills are settlements of some importance referred to by Buchanan; both these hill settlements were situated on the trade route to Tibet. A number of small, periodic market centers *(hats)* existed along the Indian border in the Tarai. Buchanan refers to 24 such places east of the Kosi River in the present districts of Sunsari, Morang, and Jhapa (Buchanan [1819] 1971:152).

Urban growth in the Hills

Throughout the nineteenth century very few market settlements based on trade developed in the Hill region. Those that acquired some importance—Tansen, Pokhara, and Bandipur in the Central Hills; Banepa, Dhulikhel, Dhankuta, Chainpur, and Dolakha in the Eastern Hills—derived their importance as administrative centers, strategic garrisons, or nodes in a commercial trail network. The little growth in trade that took place was a consequence of the spread of Newar traders and petty manufacturers westward and eastward from Kathmandu (Blaikie et al. 1980:123–24). The rugged hilly terrain imposed severe limits on the movements of both goods and people. Throughout the nineteenth century, "economic opportunities based outside agriculture were scarce, while caste and tradition discouraged occupational mobility. Every village was more or less a closed economic unit producing the basic requirements of life" (Regmi 1971:37).

The state apparatus and its legal and administrative policies during the nineteenth century were geared to the task of extracting economic surplus from the peasantry for the benefit of the ruling groups. Very little, if any, attention was paid to the development of agriculture, the foundation of the political and economic system. The *Jhara* system of compulsory and unpaid labor for the state required able-bodied peasants to leave their villages and provide labor services often in distant places (Regmi 1971:102). Such forced labor obligations adversely affected agricultural productivity. Maintaining an expanding administrative and military apparatus depended on the increasing extraction of agricultural revenue from peasants who were already at the margin of subsistence. At the same time, the most productive lands were appropriated (in the form of land grants and assignments) by members of the aristocracy, bureaucracy, and military with virtually no obligations to the state (Regmi 1963–68): "Low agricultural productivity, high burden of rents and taxes . . . ensured that the majority of peasants in nineteenth century Nepal lived on the margin between subsistence and destitution" (Regmi 1978:154). The basis for exchange was scant and specialization remained a far cry.

Urban growth in the hills of Nepal became apparent only after 1950 with the expansion of bureaucracy, overall increase in the volume of trade, and the formation of infrastructure networks (Blaikie et al. 1980:130).

Urban growth in the Tarai

Political, demographic, and climatic reasons discouraged the growth of large permanent settlements in the Tarai well up to the early part of this century. The primitive form of mercantilism that Nepal jealously practiced vis-à-vis Tibet and the political-economic climate of distrust that permeated Anglo-Nepalese relations after the 1814–16 war effectively circumscribed all British efforts to increase trade relations with Nepal. The situation hardly changed when in 1846 the power of the monarchy was usurped by the Ranas, a dynasty of hereditary prime ministers, who introduced a system of family oligarchy, maintained a guarded friendship with the British (often aiding them in times of need to enhance their own security but refraining from close commercial contact), and practiced what might be termed "selective autarchy." Maintaining law and order and collecting revenue became the two cornerstones of Rana policy throughout the 104 years they effectively ruled Nepal.

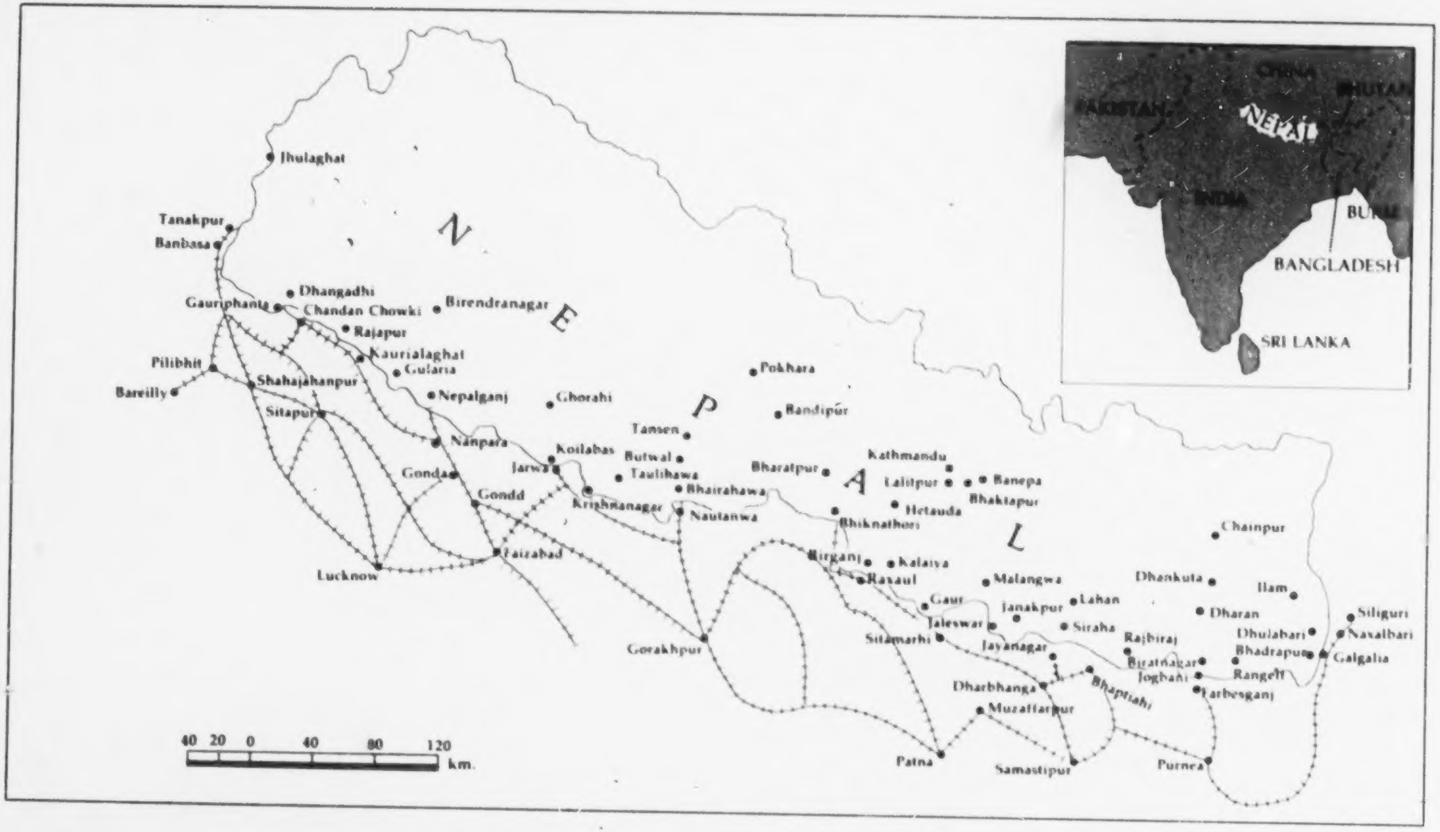
Since the unification of Nepal in 1769 the Tarai, and the Eastern Tarai in particular, was the richest revenue-yielding territory in the government's possession (Regmi 1971:56). Given the condition of traditional agriculture, the only way of increasing state revenue was to bring large tracts of the forested and malarial Tarai under cultivation. This effort necessitated large-scale population movements into the sparsely populated Tarai. Throughout the nineteenth century the government encouraged the hill population as well as the population from across the border to settle in the Tarai. The government even undertook experiments in opening state-operated new markets in appropriate places in the Tarai and the Inner Tarai (Regmi 1971:152–153). The ravages of malaria and the system of production relationship did not, however, lead to any great success. Small, often seasonal, trade marts flourished and acted as custom checkpoints. Well up to the 1920s no urban place with a sizable urban population evolved in the Tarai.

Before the extension of the Indian railway network along the Nepal border, a number of small trade marts appear to have flourished as gateways of trade between Nepal and India (Sen 1977:40–63). Rangeli (19 kilometers east of present-day Biratnagar), Gogra(ha)—the old name of present-day Biratnagar—and Haraicha were important trade posts on the Eastern Tarai border adjoining the Purnea district in Bihar (India). Janakpur, Jaleswor, and Semroungarh were Nepalese trade posts on the approach to Muzaffarpur in Bihar. Bhiknathori in the present-day Parsa district of Nepal facilitated the approach to Champaran district in Bihar. The most important trade link to Kathmandu was through Raxaul, Hetauda, and Bhimphedi in the hills. Sunauli and Tribenighat controlled the approaches to Basti and Gorakhpur districts in Uttar Pradesh (India). In the Central Tarai, Butwal, Bahadurganj, and Captainganj were Nepalese trade marts of considerable importance. Rice, timber, and medicinal herbs constituted the main items of export from Nepal. Cotton goods, salt, sugar, and tobacco were the important items of import. In the Western Tarai, Banke (present-day Nepalganj) was by far the best-known of all Nepalese frontier marts. Jhulaghat in Baitadi served as a trade link between the far western hills and India. Seasonality of trade was an important aspect of these trade marts and as such they appear to have hardly attained any permanent sizable population.

The structure of Indo-Nepal trade and the relative importance of the frontier marts were significantly affected by the extension of the Indian railway network along the Nepal border. This extension appears to have been motivated by two main considerations: Not only did the railheads provide an effective means of channeling the grain trade, but railheads along the border supplied construction material such as timber (for railway sleepers) and boulders that were available in abundance in the Tarai region. The Rana government which had never positively encouraged commercial relations with British India, nevertheless profited from the resulting trade in timber (the bulk of which was carried under state auspices) and grain. The volume of trade increased, as well.

The extension of the Indian railway network affected Nepalese frontier marts considerably. The Purnea section of the Assam-Bihar State Railway up to Forbesgunj near the Indo-Nepal border was opened in 1890. The later extension of this line up to Jogbani on the Indo-Nepal border influenced the growth of Biratnagar. In 1897 the railway line running from Sakri to Jayanagar on the Nepal frontier was almost complete. The growth of Janakpur was influenced by this development. During 1898-99 a feeder rail line of the Tirahut Railway from Sugauli to Raxaul on the Nepal border was completed. This link provided the quickest route of goods to Kathmandu. Adjoining the Central Tarai region the Gonda-Tulsipur Railway was opened in 1897. The extensions of this line to the Nepal frontier near Bahadurgunj influenced the Nepalese markets of Bahadurgunj, Taulihawa, and Bhairahawa (Sidharthanagar). In 1899 the railway line from Bahraich to the border near Nepalganj in the Western Tarai was complete. This link provided significant impetus for the growth of Nepalganj (Sen 1977:70-79). The spatial framework for the later urban growth in the gateway settlements of the Tarai was thus created in the last decade of the nineteenth century (Map 1). Almost all of these trade centers specialized in the export of local and regional grain surpluses and timber (Blaikie et al. 1980:125-26; Regmi 1978:140; Gaige 1975:35-38).

The 1923 treaty between Great Britain and Nepal was a landmark in the growth and development of land ports as break-of-bulk points along the border. It laid the basis for stable and increasing commercial ties between British India and Nepal. The seats of administration benefited from increasing trade. In a way, the expansion of the Indian railroads provided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Rajbiraj
Biratnagar
Joghabi
Forbesganj
Purnea
Chainpur
Dhankuta
Dharan
Ilam
Dhulabari
Bhadrapur
Rangeli
Siliguri
Naxalbari
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km.

Map 1. Important localities in Nepal in relation to Indian railheads in the 1950s the framework and the 1923 treaty provided the impetus for growth, but the points of growth were dictated by strategic and political considerations.

By the first quarter of the twentieth century the external conditions for urban growth were in existence in the Tarai. A relatively large and growing agricultural potential of the Tarai provided the basis for commerce. The Indian railheads served as the link between the Tarai and the growing demand in northern India (Seddon 1983:17). Indian businessmen had long entered the Nepalese break-of-bulk points as traders, middlemen, and brokers with extensive linkages in the major urban centers of northern India and beyond. Unlike the Kathmandu Valley where most of the conditions for urban growth indigenously evolved through the centuries, urban growth in the Tarai was simply an extension of the Indian urban system.

It was only during the second quarter of the twentieth century that signs of urban growth became evident in the Tarai. This growth was manifested in strategic points of commercial import and administrative attention. It also seems to have coincided with the incipient process of Hill-to-Tarai migration that was beginning in the 1920s. In the Eastern Tarai the process of agro-based industrialization initiated in the 1930s provided considerable stimulus to urban growth. The joint industrial ventures started in Biratnagar in the 1930s, for example, took advantage of the agricultural base of the surrounding region and the railheads that linked these industries with the Indian market (Shrestha 1966:108–124).

The initiation of the malaria eradication program in the late 1950s created conditions for a large-scale migration of Hill population to the Tarai. The economic importance of the Tarai region was manifested in the steady growth of physical as well as administrative infrastructure in later decades. As a consequence the erstwhile malarial area was transformed into a productive agricultural and commercial frontier.

The growth of Tarai towns at break-of-bulk points along the border and the extension of rudimentary infrastructure in the plains also laid the groundwork for the growth of other settlements further inland—at the foothills leading to the large hill hinterlands. These were also locations where the mode as well as the exigencies of transport changed. Among such locations, Butwal (Central Tarai) and Hetauda (Central Inner Tarai) were noted gateways to hill trade as early as the late eighteenth century. As Biratnagar gained in significance, Dharan in the foothills leading to the Eastern Hill hinterland evolved as an important settlement.

The 1952/54 census, conducted before the initiation of the malaria eradication program in the 1950s, provides some idea of the size of traditional trade marts and settlements of consequence along the Indo-Nepal border (Table 1). Almost all these localities, as far as can be ascertained, thrived primarily on commerce and specialized in grain trade but derived importance due to their immediate access to Indian railheads. Biratnagar was the

Table 1. Important localities in the Tarai: 1952/54

Eastern Tarai	Central Tarai	Western Tarai
Birganj (10,037)[a]	Taulihawa (2,856)[a]	*Nepalganj* (10,813)[a]
Biratnagar (8,060)[a]	Butwal (2,597)[b]	Koilabas (1,061)[d]
Janakpur (7,037)[a]	Krishnanagar (2,393)[a]	Rajapur (946)[a]
Malangwa (5,551)	Bahadurganj (1,293)	Gularia (894)[a]
Dharan (4,401)[b]	Parasi (1,286)	Dhangadhi (530)[a]
Matihani (4,298)	Bhairahawa (1,154)[a]	
Gaur (3,520)[a]	Captainganj (743)[a]	
Jaleswar (3,416)	Tribeni (446)	
Siraha (2,546)[a]	Hetauda (189)[c]	
Rajbiraj (2,376)		
Lahan (1,777)		
Dhulabari (1,500)		
Bhadrapur (1,478)[a]		
Hanumannagar (1,411)[a]		
Rangeli (1,374)		
Kalaiya (1,350)		

Source: Nepal, Department of Statistics (1957: app.).

Note: Population is shown in parentheses. Italicized names are designated urban areas in the 1952/54 census with population above 5,000.

a. Localities with near access to Indian railheads.

b. Foothill location in the Tarai.

c. Foothill location in the Central/Inner Tarai.

d. Foothill location in the Siwalick range.

only center with some industrial activity of consequence. What is interesting is the very slow process of growth in population size in many of these localities, which were noted as trade centers as early as the late nineteenth century.

Rapid expansion of the agricultural potential of the Tarai due to large-scale Hill-Tarai migration, quantum increases in the volume of trade with India, steady expansion of state bureaucracy, creation of physical infrastructure—all together contributed to the urban growth and urbanization in the Tarai that were to follow after the 1950s.

URBANIZATION AND URBAN GROWTH IN NEPAL: 1952/54-1981

The antecedents of urban growth in Nepal indicate that the conditions for large-scale population concentration were absent outside the Kathmandu Valley until quite recently. Since the nature of settlement distribution illustrates that Nepal is predominantly a country of villages, the very notion of a functional urban area has to be appreciated in a context quite different from that of the West.

The Nature of Settlement Distribution

The 1952/54 and 1961 censuses of Nepal provide an idea of the nature of population distribution by size of settlements. The settlement clusters defined as localities in the 1952/54 and 1961 censuses conform with the notion of a village in the Nepalese setting—that is, a cluster of houses sometimes spread over a considerable area but in relative proximity.[4] In the 1971 and 1981 censuses, localities seem to have been defined in the sense of *panchayats* or local-level administrative units demarcated for administrative and often political convenience (Kansakar 1977). Because of this difference in definition the 1971 and 1981 figures are not comparable with figures provided in earlier censuses (Table 2).

In 1952/54 nearly 85 percent of the 28,780 localities in Nepal had a population of less than 500 and harbored a little over 48 percent of the total population. Although localities with a population less than 2,000 were not classified in the 1961 census, a similar pattern seems to have been maintained. In both censuses over 88 percent of the total population was in localities with fewer than 2,000 persons. These localities comprised over 99 percent of the total localities in the country.

The 1971 and 1981 censuses show that more than 50 percent of the localities in both censuses had populations between 2,000 and 4,999, and only 0.31 percent of localities had populations below 500. The significantly reduced number of localities as well as the nature of population distribution in size class of settlements in both censuses reflect the predetermined population size norm for a *panchayat* rather than a fundamental restructuring of the settlement configurations in the country. The rising growth rate of the country's largely rural population in the last three decades has possibly led to more incidences of settlement agglomeration than an increase in the number of settlements in the hills in general. The increase in the

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[4] The definition of localities used in the 1952/54 and 1961 censuses was based on revenue units within districts. Such units (locally termed *garkha* west of the Karnali River, *dara* between Karnali and Bheri, and *thum* east of the Bheri River) were based on the notion of the cluster of relatively closely spaced settlements.

Table 2. Percentage distribution of population and number of localities/*panchayats* by size of locality: Nepal, 1952/54–1981

Size	1952/54		1961		1971[a]		1981[a]	
	Population (%)	Localities (%)	Population (%)	Localities (%)	Population (%)	Localities (%)	Population (%)	Localities (%)
100,000 and over	1.26	*	1.29	*	1.30	0.03	1.57	0.03
50,000–99,999	0.0	0.0	0.0	0.0	0.51	0.03	1.15	0.07
20,000–49,999	0.88	0.01	1.24	0.01	1.30	0.13	4.44	0.75
10,000–19,999	0.25	0.01	0.43	0.01	1.93	0.43	8.32	3.44
5,000–9,999	0.43	0.02	0.61	0.03	12.01	5.83	43.96	34.62
2,000–4,999	8.11	0.87	8.11	0.76	69.85	68.71	39.22	55.71
1,000–1,999	16.04	3.51	88.32	99.18	12.44	22.23	1.08	3.58
500–999	24.99	10.67			0.63	2.31	0.23	1.50
Below 500	48.05	84.92			0.04	0.31	0.02	0.31
Total	100.0 (8,473,478)[b]	100.0 (28,780)	100.0 (9,412,996)	100.0 (28,661)	100.0 (11,555,983)	100.0 (3,931)	100.0 (15,022,839)	100.0 (2,935)

Sources: Nepal, Department of Statistics (1957: pt. 1, table 8); Nepal, CBS (1967: vol. 1, table 19); Nepal, CBS (1975: vol. 1, table 4); Nepal, CBS (1984: pt. 1, vol. 1, table 6).

*Less than 0.01.

a. In 1952/54 and 1961 localities were defined as settlement clusters while in 1971 and 1981 they appear to have been defined as *panchayats* consisting of a number of villages or settlement units.

b. Includes absentee population.

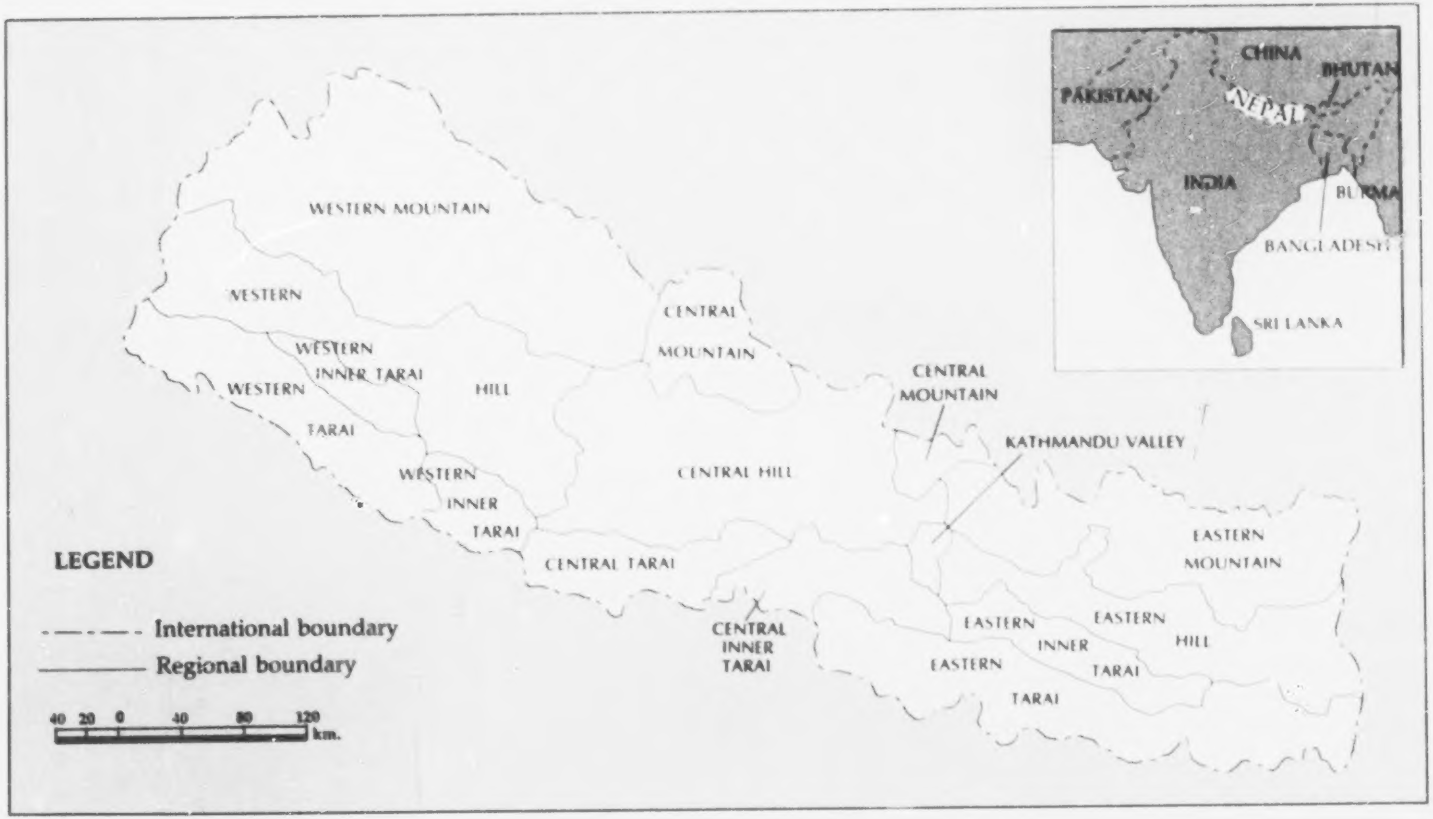
number of settlements in the hills has been remarkable only in areas that have been opened up by new roads (Blaikie et al. 1976). In the Tarai migration has contributed enormously to the rise of spontaneous new settlements in previously forested areas. One estimate puts the incidence of spontaneous settlement in the Tarai between 2,500 and 7,000 hill households per year in the 1960s and 6,500 to 8,700 hill households per year in the 1970s (Ojha 1983:32). Available information indicates that the settlement structure of the Tarai and Inner Tarai changed substantially between 1961 and 1981. The rise of small towns, market centers, and bazaars in favorably situated localities (particularly with respect to roads and major development projects) has increased the number of localities performing urban functions for areas around them. Further, a number of new settlements have grown in the formerly uninhabited fringes of the heavily forested Inner Tarai and northern Tarai regions. Deforestation, which is estimated at around 2 percent a year since the mid-1960s (World Bank 1983), has greatly contributed to interregional and intraregional redistribution of the country's population and settlements (New Era 1984:85).

Available data on the nature of settlement and population distribution suggest that Nepal's settlement structure is predominantly rural in character. In the Tarai and the Hill region, settlement agglomeration has been complemented by the growth of a number of small towns and market centers in localities situated along major transport lines. In this sense there has been an increase in the number of localities that perform some urban functions. Such localities are not included in the definition of urban areas in Nepal. Nepalese censuses define an urban area on the basis of municipal status. Since municipal status is conferred on localities on political and administrative rather than functional grounds, the recognized urban localities in Nepal underestimate the distribution and growth of functionally urban settlements in the country.

Patterns of Urban and Rural Population Growth

In order to analyze the patterns of urban and rural population growth and urbanization in Nepal, I have adopted a four-region framework. The Hill region (including the mountains), the Kathmandu Valley, the Inner Tarai, and the Tarai represent four distinct geographical regions of Nepal. The Kathmandu Valley is often included in the Hill region, but the unique features of urban growth in the valley merit separate attention. In the Hill, Inner Tarai, and Tarai regions three geographically defined dimensions (west, central, and east) have been recognized. This regional framework (Map 2) is more faithful to the ecological and demographic domains of Nepal than the regional framework utilized in much of the development literature.

A note of caution may be in order here. The weaknesses inherent in the definition of urban areas in Nepal have been noted above. Subject to


CHINA
BHUTAN
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NEPAL
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BURMA
BANGLADESH
SRI LANKA
WESTERN MOUNTAIN
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INNER TARAI
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KATHMANDU VALLEY
CENTRAL HILL
CENTRAL TARAI
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EASTERN
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TARAI
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TARAI
LEGEND
International boundary
Regional boundary
40 20 0 40 80 120
km.

Map 2. Regional divisions of Nepal

these weaknesses, my analysis of urban growth and urbanization is based on urban definition and urban boundaries as they existed in each census, for the census is the only source of urban data for Nepal. Urban growth refers to the growth of population in designated urban areas. Urbanization at national and regional levels is defined as the proportion of total national and regional population living in designated urban areas.

The paucity of data for earlier periods makes the analysis possible only since 1952/54. The 1950s incidentally mark a watershed in Nepal's political, economic, and demographic history. With the end of the 104 years of Rana oligarchy Nepal, in more ways than one, opened its gates to the outside world in 1951. Nepal's concern with development was reflected in the initiation of the First Five-Year Plan in 1956. This concern, characterized by expansion in administrative and physical infrastructure, increased foreign aid, and heightened economic dependency on India, has fundamentally affected the parameters determining the spatial manifestations of urban growth and urbanization in Nepal. The 1950s also mark the beginning of a continually increasing trend in population growth rates—total and urban as well as rural. A large-scale demographic shift of population from the Hills to the Tarai plains has been evident in Nepal also since the 1950s, when a rather successful malaria eradication program was launched.

The population of Nepal increased from 8.3 million in 1952/54 to 15.0 million in 1981. From a low base of 238,275 in 1952/54 the population in designated urban localities more than quadrupled during the same period. The number of designated urban places increased from 10 in 1952/54 to 23 in 1981. In the same period the proportion of urban population went up from 2.89 to 6.37 percent. The number of urban localities with over 10,000 people increased from five to 21, and the proportion of population in such localities increased from 2.45 to 6.24 percent. How is this increasing urbanization reflected in the regional patterns of urban and rural growth?

Table 3 shows the pattern of urban and rural population growth in different regions. The figures should only be taken as indicative because data at the subregional level may not be strictly comparable due to frequent changes in district boundaries.

The Tarai and Inner Tarai regions together have experienced annual growth rates consistently above the national average in total, urban, and rural population in the last three intercensal decades. In contrast, the Kathmandu Valley, the most urbanized region in the country, shows rural growth rates superseding urban growth rates until 1971. The Hills reflect lowering rural growth rates accompanied by higher urban growth rates but considerably smaller size of urban population. The figures by themselves hide the essential demographic and developmental processes that have operated in Nepal since the 1950s.

Table 3. Total population, urban and rural population, and growth rates of urban and rural populations by geographical region: Nepal, 1952/54–1981

Region	1952/54 Total population	 Urban population	 Rural population	1961 Total population	 Urban population	 Rural population	Average 1952/54–1961 growth rate Urban	 Rural
Mountains/Hills	4,945,878 (59.9)	0	4,945,878	5,531,307 (58.8)	16,237	5,515,070	na	1.37
West	1,483,946[a]	0	1,483,946	1,698,083[c]	0	1,698,083	na	1.70
Central	1,753,116	0	1,753,116	1,946,502[d]	10,549	1,935,953	na	1.25
East	1,708,816	0	1.708,816	1,886,722	5,688	1,881,084	na	1.21
Kathmandu Valley	410,995 (5.0)	196,777	214,218	459,990 (4.9)	218,092	241,898	1.29	1.53
Inner Tarai	493,936 (6.0)	0	493,936	518,685 (5.5)	0	518,685	na	0.61
West	123,150[b]	0	123,150	98,607[e]	0	98,607	na	-2.78
Central	181,558	0	181,558	226,412[f]	0	226,412	na	2.80
East	189,228	0	189,228	193,666	0	193,666	na	0.29
Tarai	2,405,816 (29.1)	41,498	2,364,318	2,903,014 (30.8)	101,893	2,801,121	11.88	2.14
West	235,189	10,813	224,376	271,551	15,817	225,734	4.87	1.65
Central	364,578	0	364,578	418,181[g]	0	418,181	na	1.73
East	1,806,049	30,685	1.775,364	2,213,282	86,076	2,127,206	13.76	2.29
Nepal	8,256,625	238,275	8,018,350	9,412,996	336,222	9,076,774	4.40	1.56

Source: Nepal, CBS (1957, 1967, 1975, 1984).

Note: The 1971 and 1981 figures for geographical regions and subregions are in general comparable; the 1952/54 and 1961 figures have been made broadly comparable, but the 1961 figure for Western Inner Tarai appears to be an underestimation. Since the census regions for 1952/54 and 1961 are not strictly comparable, comparability has been attempted in the following way:

a. Excluding Charkabhot. b. Including Surkhet. c. Excluding Skurkhet. d. Including Charkabhot. e. Dang only.

Table 3. *(continued)*

Region	1971			Average 1961-71 growth rate		1981			Average 1971-81 growth rate	
	Total population	Urban population	Rural population	Urban	Rural	Total population	Urban population	Rural population	Urban	Rural
Mountains/Hills	6,062,376 (52.5)	34,344	6,028,032	7.78	0.89	6,946,549 (46.2)	83,376	6,863,173	9.27	1.31
West	1,748,305	0	1,748,305	na	0.29	2,011,868	0	2,011,868	na	1.41
Central	2,260,314	27,045	2,233,269	9.87	1.44	2,647,508	59,767	2,587,741	8.25	1.48
East	2,053,757	7,299	2,046,458	2.53	0.85	2,287,173	23,609	2,263,564	12.46	1.01
Kathmandu Valley	618,911 (5.4)	249,563	369,348	1.36	4.32	766,345 (5.1)	363,507	402,838	3.83	0.87
Inner Tarai	880,194 (7.6)	16,194	864,000	na	5.24	1,279,081 (8.5)	96,861	1,182,220	19.59	3.19
West	272,753	0	272,753	na	10.71	432,589	34,467	398,122	na	3.85
Central	347,410	16,194	331,216	na	4.35	502,982	62,394	440,588	14.44	2.89
East	260,031	0	260,031	na	2.99	343,510	0	343,510	na	2.82
Tarai	3,994,502 (34.6)	161,837	3,832,665	4.74	3.19	6,030,864 (40.1)	412,977	5,617,887	9.82	3.90
West	425,242	23,523	401,719	4.05	4.62	831,243	105,123	726,120	16.15	6.10
Central	595,110	30,087	565,023	na	3.06	957,969	53,702	904,267	5.96	4.81
East	2,974,150	108,227	2,865,923	2.32	3.03	4,241,652	254,152	3,987,500	8.91	3.36
Nepal	11,555,983	461,938	11,094,045	3.23	2.03	15,022,839	956,721	14,066,118	7.55	2.40

Note: *(continued)* f. Excluding Nawalpur. g. Including Nawalpur.

The 1961 and 1971 figures may not be comparable at the level of geographical subregion because of changes in district boundaries introduced in 1962. The growth rate of Kathmandu Valley rural population may be on the high side; therefore the rural population grew at a higher rate than urban population between 1961 and 1971. In any case, the figures should be taken as indicative of the trends of urban-rural population growth only (see text). For the sake of comparison Mountains and Hills have been lumped into one group. The Mountain region as defined in the 1971 and 1981 censuses does not have any urban places/urban population.

The population of the Tarai and the Inner Tarai had remained almost stable between 1920 and 1941 at about 2 million (Joshi 1974:247). Despite this area's tremendous potential for agriculture, malarial conditions discouraged the growth of settlements. As a consequence the Tarai experienced little migration from the Hill/Mountain region where the pressure of population had been building up as early as the mid-nineteenth century.

The initiation of the malaria eradication program in the 1950s brought thousands of land-hungry hill folk to the new frontier. This phenomenal movement of population from the Hill/Mountain region to the Tarai has been increasing with each decade. The 1981 census records nearly 700,000 net internal lifetime migrants to the 20 contiguous Tarai districts. Immigration to the Tarai has also been on the rise. Although successive censuses since 1961 show a decline in foreign-born population in the country (337,620 in 1961, 337,448 in 1971, and 234,039 in 1981), this decline is more apparent than real. The de jure nature of Nepalese census operations and the misreporting of birthplace by immigrants from India (owing to citizenship problems) are the real reasons contributing to the apparent decline in foreign-born population. The censuses, however, reveal that over 90 percent of the foreign-born population in each census originated from India.

Recent studies and estimates show that immigration to the Tarai has proceeded much faster in the last decade. A study by the National Commission on Population shows that as much as 24 percent of the migrants in the Tarai migration stream are immigrants, over 96 percent of whom are Indians (Nepal, NCP, 1983a:17). This redistribution of population (as a consequence of internal as well as international migration) has significantly accelerated the growth of settlements in the economically dynamic Tarai.

The economic importance of the Tarai region can be gauged from the fact that in 1980–81 the 20 contiguous southern districts (which include the two Inner Tarai districts of Dang and Chitwan) accounted for 81.6 percent of the country's rice and 62.9 percent of the wheat production (Asian Development Bank 1982: vol. 2, pp. 262–63). This region also had 67.7 percent of the total industrial establishments, 69.2 percent of the total industrial employment, and 72.7 percent of the value added in manufacturing in 1981 (Nepal, CBS, 1985a: table 14).[5] Moreover, 56.4 percent of Nepal's road network was in the Tarai districts in 1981. The phenomenal growth of urban as well as rural population in the Tarai has been the result of these developments. The Inner Tarai region has witnessed the same demographic processes as the Tarai. By virtue of its location between the Hills and the Tarai, the Central Inner Tarai in particular has benefited immensely from developments in infrastructure, basically roads.

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[5] According to one assessment there are four critical dimensions that identify the importance of the Tarai in Nepal's economy. First, it is the only source of food supplies essential to maintain the urban centers, the exploding bureaucracy, the army, the police, and also the extremely food-deficient area of the Hills. Second, it is the major source of foreign exchange earnings, which are in turn essential to maintain a country wholly dependent on imported manufactured goods. Third, it is a major source of government revenue through the collection of land taxes, forced loans, excise tax, and export levies. Finally, the Tarai has been able, until now, to absorb labor from the overpopulated hills where the pressure on cultivable land is thrice as great. These functions have been critical in determining the viability of Nepal's economy (Feldman and Fournier 1976:449–50).

In contrast to the Tarai, the Hill region has traditionally remained the major area of population concentration. Limited agricultural land, difficult mountainous terrain, and limited prospects of economic development have all contributed to steadily increasing out-migration from the Hills in the last three decades. The 1971 and 1981 censuses of Nepal recorded a net migration of 399,925 and 686,178 persons respectively from the Hill/Mountain regions to the Tarai. Consequently, the growth rate of rural population in the Hills has remained lower than the national average. The growth of selected Hill localities where the developmental focus and administrative attention have been pronounced has contributed to higher urban growth rates since 1961, but urban growth in the Hill region has spatially been much less dispersed than in the Tarai.

In 1941 the three cities of the Kathmandu Valley were the only localities with more than 10,000 people in Nepal. The preeminence of Kathmandu in the political and socioeconomic life of Nepal has remained unsurpassed. As the seat of political and administrative power Kathmandu also has had the benefit of rapid development in many spheres. However, it is quite possible that during 1952/54–1961 the rural growth rates superseded urban growth rates in the valley. The fact that most of the permanent migrants to the valley resided in rural surroundings close to the urban centers indicates that they contributed to rural growth more than urban growth. Moreover, the stream of valley-bound migrants appears to have been very limited during the intercensal decade. With the exception of Tribhuvan Rajpath, which was opened for traffic in 1956 and which connected Kathmandu to the Eastern Tarai town of Birganj, the Kathmandu Valley had no road links with other regions of the country.

Major developments in infrastructure in the valley began to take place in the 1960s. The Kathmandu and Lalitpur districts also experienced increases in area as a result of the reorganization of districts in 1962. The urban boundaries of valley towns, however, remained the same in 1971 as they were in 1961. Meanwhile outer city and fringe areas not within urban limits experienced a considerable rise in population (Joshi 1974:244; Conway and Shrestha 1980:485). And during the intercensal period Kirtipur and Thimi, which were recognized urban areas in the valley in 1961, were declassified, thus reducing the number of urban areas in the valley from five to three. As a consequence, rural growth rates in the valley appear much higher than urban growth rates. The fact that Kathmandu district's population during the 1961-71 decade appears to have grown at more than twice the rate of the urban population indicates considerable underbounding of Kathmandu urban area.

The boundaries of most urban areas in Nepal, including Kathmandu, were extended in 1976, accounting for part of the rise in urban growth rates of the valley towns. There is no doubt, however, that the growth in foreign aid and tourism, consequent developments in infrastructure and services, the construction of the ring road circling the cities of Kathmandu and Lalitpur, and the rise in bureaucracy as well as ancillary employment opportunities have all contributed to the accelerated pace of in-migration as well as immigration to Kathmandu and Lalitpur.

To sum up, then, high rates of regional urban growth in Nepal have been accompanied by high rural growth rates. The divergence of urban and rural growth rates has been visible in the Kathmandu Valley only in the last decade. In this essential sense urban growth appears to have been associated with the interregional redistribution of population.

Regional Levels of Urbanization

The problem of urban boundaries notwithstanding, regional levels of urbanization can be taken as indicators of the differentials in developmental potentials and prospects of different regions. Changes in the regional levels of urbanization through 1952/54–1981 suggest that in successive periods the levels of urbanization have risen more dramatically in the Tarai and Inner Tarai regions than in the Hills and the Kathmandu Valley (Table 4 and Figure 1).

The Kathmandu Valley has by far the highest level of urbanization of any region in the country. In each period since 1952/54 over 40 percent of the valley's population has remained urban. Relative to the Kathmandu Valley the level of urbanization in other regions of Nepal is exceedingly low, but the Western Tarai (12.65 percent in 1981) and the Central Inner Tarai regions (12.40 percent in 1981) have experienced significant increases in the level of urbanization in the 1970s. The rise in the level of urbanization in the Eastern Tarai has been moderate in comparison. As we might expect, the Hills have the lowest level of urbanization throughout. Only 1.2 percent of the Hill population was urban in 1981.

Subregional comparisons of the levels of urbanization have to be seen in the light of the territorial extent and population of different regions. The Eastern Tarai, for example, has the highest number of urban places and the largest urban population outside the Kathmandu Valley. It also comprises 11 of the 18 Tarai districts and nearly 70 percent of the total Tarai population. In comparison the Central and Western Tarai have three and four districts respectively. The Central and Western Inner Tarai have two districts each.

Table 4. Regional levels of urbanization: Nepal, 1952/54–1981

Region	1952/54		1961		1971		1981	
	Percentage urban	Percentage 10,000+	Percentage urban	Percentage 10,000+	Percentage urban	Percentage 10,000+	Percentage urban	Percentage 10,000+
Western Hills	0	0	0	0	0	0	0	0
Central Hills	0	0	0.54 (2)	0	1.20 (2)	0.91 (1)	2.26 (2)	2.26 (2)
Eastern Hills	0	0	0.30 (1)	0	0.36 (1)	0	1.03 (2)	0.60 (1)
Hills total	0	0	0.29 (3)	0	0.57 (3)	0.34 (1)	1.20 (4)	1.06 (3)
Kathmandu Valley	47.88 (5)	44.06 (3)	47.41 (5)	44.05 (3)	40.32 (3)	40.32 (3)	47.43 (3)	47.43 (3)
Western Inner Tarai	0	0	0	0	0	0	7.97 (2)	7.97 (2)
Central Inner Tarai	0	0	0	0	4.66 (1)	4.66 (1)	12.40 (2)	12.40 (2)
Eastern Inner Tarai	0	0	0	0	0	0	0	0
Inner Tarai total	0	0	0	0	1.84 (1)	1.84 (1)	7.57 (4)	7.57 (4)
Western Tarai	4.60 (1)	4.60 (1)	5.82 (1)	5.82 (1)	5.53 (1)	5.53 (1)	12.65 (3)	12.65 (3)
Central Tarai	0	0	0	0	5.06 (2)	5.06 (2)	5.61 (2)	5.61 (2)
Eastern Tarai	1.70 (4)	0.56 (2)	3.89 (7)	2.72 (4)	3.64 (6)	3.12 (4)	5.99 (7)	5.76 (6)
Tarai total	1.72 (5)	0.87 (3)	3.51 (8)	2.62 (5)	4.05 (9)	3.67 (7)	6.85 (12)	6.69 (11)
Nepal	2.89 (10)	2.45 (6)	3.57 (16)	2.96 (8)	4.00 (16)	3.75 (12)	6.37 (23)	6.24 (21)

Source: See Table 3.

Note: Hills include the Mountain region also. Figures in parentheses indicate the number of urban areas.

If the level of urbanization is measured by the number of urban areas, the Tarai in general and Eastern Tarai in particular occupy the first place among urbanized regions in the country. While the absence of functional criteria in designating urban places in Nepal should be noted, the Eastern Tarai, by virtue of its large agricultural production base and large concentration of infrastructural and developmental investment, appears to be developing as the major urbanized region in the country second only to the Kathmandu Valley.

At the district level, of the 75 districts that comprise Nepal only 15 had any urban population in 1971 (Table 5). In 1981, altogether 22 districts had urban places. Rupandehi district in the Central Tarai is the only district with more than one designated urban place. Of the 52 Hill/Mountain districts, 48 have no urban population. None of the 16 formally recognized Mountain districts have any urban population.

Increases in the levels of urbanization are seen in all 15 comparable districts between 1971 and 1981 with only two exceptions: Bhaktapur in the

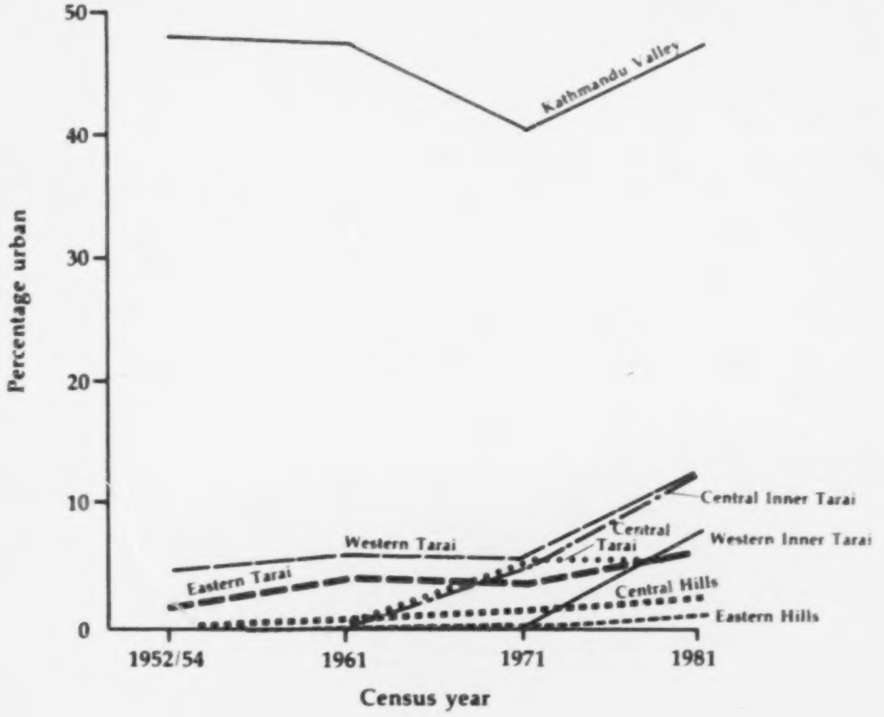


Figure 1. Regional trends in urbanization level of Nepal: 1952/54–1981

Table 5. Districtwise percentage of population urban: Nepal, 1971 and 1981

Districts	Percentage urban 1971	Percentage urban 1981
Central Hills (16)[a]		
Kaski	13.6	21.1
Palpa	3.0	6.1
Eastern Hills (14)		
Dhankuta	0	10.7
Ilam	5.2	5.5
Kathmandu Valley (3)		
Bhaktapur	36.4	30.3
Kathmandu	42.5	55.7
Lalitpur	38.1	43.3
Western Inner Tarai (2)		
Surkhet	0	8.3
Dang	0	7.7
Central Inner Tarai (2)		
Makwanpur	9.9	14.3
Chitwan	0	10.6
Western Tarai (4)		
Banke	18.7	16.6
Kanchanpur	0	25.9
Kailali	0	10.6
Central Tarai (3)		
Rupandehi	12.4	14.2
Eastern Tarai (11)		
Parsa	6.4	15.3
Dhanusha	4.3	8.1
Siraha	0	3.7
Saptari	2.5	4.3
Morang	15.0	17.5
Sunsari	9.2	12.2
Jhapa	3.0	2.0
Nepal (75)	4.0	6.4

Sources: Nepal, CBS (1975: vol. 5, table 39, and vol. 1, table 1); Nepal, CBS (1984: vol. 3, table 3, and vol. 1, pt. 1, table 3).

Note: Districts with no urban population in 1971 or 1981 are excluded from the table. In 1971 as well as 1981 Western Hills and Eastern Inner Tarai districts had no urban population.

a. The number of districts in each region is given in parentheses.

Kathmandu Valley and Banke in the Western Tarai. While Bhaktapur has been shadowed by the proximity of metropolitan Kathmandu, Banke like other Tarai districts has experienced increased migration from the Hills. This migration, however, has contributed more to rural than to urban growth because an overwhelming majority of the migrants are land-hungry hill folk whose major motivation for migration is the availability of agricultural land in rural areas.

The Kathmandu Valley districts are by far the most urbanized districts in the country. In 1981 over 55 percent of the Kathmandu district population was urban. Lalitpur, with a close functional association with Kathmandu, had the second-highest level of urbanization in the country in both 1971 and 1981.

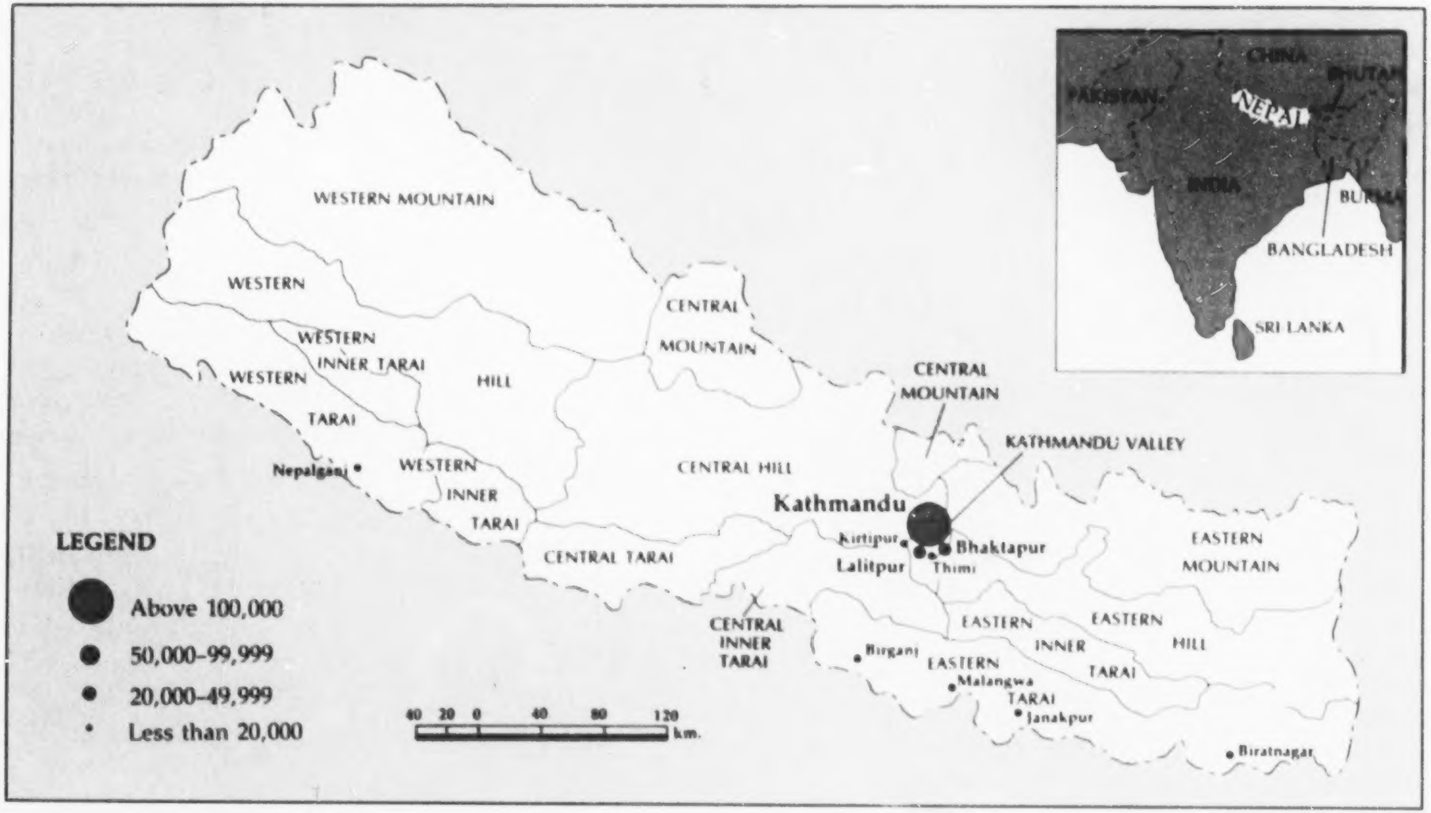
Morang, Parsa, and Sunsari districts in the Eastern Tarai, Banke in the Western Tarai, and Kaski in the Central Hills had levels of urbanization exceeding 10 percent in both periods. In 1981 some 11 districts, excluding the districts of the Kathmandu Valley, had similar levels of urbanization. Kanchanpur is seen as having the fourth-highest urbanization level among districts in 1981. This, however, is only an artifact of the overbounded nature of reclassified Western Tarai towns in 1981.

The regional and district levels of urbanization illustrate that the Tarai and Inner Tarai regions are undergoing the most transformation in Nepal. It is also apparent that there are considerable subregional and locational differences in the patterns of urban growth.

Distribution and Growth of Urban Places

Two factors confound a consistent explanation of the distribution and growth of urban places in Nepal. The first concerns the arbitrariness used in designating urban areas. The second concerns the periodic reclassification of urban boundaries. As a consequence the "real" growth patterns during different intercensal periods tend to be obscured. Although the effect of the reclassification of urban boundaries on the growth of population of towns in successive censuses cannot be ascertained, one can draw inferences for certain towns on the basis of available information.

In 1952/54 the country had only 10 urban places, five of which were in the Kathmandu Valley. The valley towns contained 82.6 percent of the total urban population and nearly 90 percent of the urban population in places of over 10,000 people (Map 3 and Table 6). There were no designated urban places in the Hills and the Inner Tarai. Five Tarai localities all along the Indian border and at or near Indian railheads had the rest of the country's urban population. At least four of these—Biratnagar, Birganj, Janakpur, and Nepalganj—were commercial and administrative centers of importance. Biratnagar was the only industrial center of consequence.


WESTERN MOUNTAIN
WESTERN
WESTERN INNER TARAI
WESTERN
TARAI
HILL
Nepalganj
WESTERN INNER TARAI
CENTRAL MOUNTAIN
CENTRAL HILL
CENTRAL TARAI
CENTRAL MOUNTAIN
KATHMANDU VALLEY
Kathmandu
Kirtipur
Lalitpur
Thimi
Bhaktapur
CENTRAL INNER TARAI
Birganj
EASTERN TARAI
Malangwa
Janakpur
EASTERN INNER TARAI
EASTERN HILL
EASTERN MOUNTAIN
Biratnagar
LEGEND
Above 100,000
50,000–99,999
20,000–49,999
Less than 20,000
40 20 0 40 80 120 km.
CHINA
PAKISTAN
NEPAL
BHUTAN
INDIA
BURMA
BANGLADESH
SRI LANKA

Map 3. Distribution of urban places in Nepal: 1952/54

Table 6. Population, intercensal change, and annual growth in designated urban localities: Nepal, 1952/54–1981

Locality	1952/54		1961		1952/54–1961			1971	
	Population	Percentage urban	Population	Percentage urban	Absolute change	Percentage change	Average annual growth (%)	Population	Percentage urban
Hills			16,237	4.8	na	na	na	34,344	7.4
Pokhara			5,413	1.6	na	na	na	20,611	4.5
Tansen			5,136	1.5	na	na	na	6,434	1.4
Dhankuta									
Ilam								7,299	1.6
Banepa			5,688	1.7					
Kathmandu Valley	196,777	82.6	218,092	64.9	21,315	10.83	1.48	249,563	54.0
Bhaktapur	32,320	13.6	33,877	10.1	1,557	4.82	0.67	40,112	8.7
Kathmandu	106,579	44.7	121,019	36.0	14,440	13.55	1.83	150,402	32.6
Lalitpur	42,183	17.7	47,713	14.2	5,530	13.11	1.78	59,049	12.8
Thimi	8,657	3.6	9,719	2.9	1,062	12.27	1.77		
Kirtipur	7,038	34.0	5,764	1.7	-1,274	-18.10	-2.85		
Inner Tarai								16,194	3.5
Birendranagar									
Tribhuvannagar									
Hetauda								16,194	3.5
Bharatpur									

Table 6. *(continued)*

Locality	1961–71			1981		1971–81		
	Absolute change	Percentage change	Average annual growth (%)	Population	Percentage urban	Absolute change	Percentage change	Average annual growth (%)
Hills	18,107	111.52	7.78	83,376	8.7	49,032	142.77	9.27
Pokhara	15,198	280.77	14.31	46,642	4.9	26,031	126.30	8.51
Tansen	1,298	25.27	2.28	13,125	1.4	6,691	103.99	7.39
Dhankuta				13,836	1.4	na	na	na
Ilam	na	na	na	9,773	1.0	2,474	33.90	2.96
Banepa								
Kathmandu Valley	31,471	14.43	1.36	363,507	38.0	113,944	45.66	3.83
Bhaktapur	6,235	18.40	1.70	48,472	5.1	8,360	20.84	1.91
Kathmandu	29,383	24.28	2.20	235,160	24.6	84,758	56.35	4.57
Lalitpur	11,336	23.76	2.15	79,875	8.3	20,826	35.27	3.07
Thimi								
Kirtipur								
Inner Tarai	na	na	na	96,861	10.1	80,667	498.13	19.59
Birendranagar				13,859	1.4	na	na	na
Tribhuvannagar				20,608	2.2	na	na	na
Hetauda	na	na	na	34,792	3.6	18,598	114.85	7.95
Bharatpur				27,602	2.9	na	na	na

Tarai	41,498	17.4	101,893	30.3	60,395	145.54	11.88	161,837	35.0
Nepalganj	10,813	4.5	15,817	4.7	5,004	46.28	5.58	23,523	5.1
Mahendranagar									
Dhangadhi									
Butwal								12,815	2.8
Sidharthanagar								17,272	3.7
Birganj	10,037	4.2	10,769	3.2	732	7.29	0.79	12,999	2.8
Janakpur	7,037	3.0	8,928	2.7	1,891	26.87	2.68	14,294	3.1
Lahan									
Rajbiraj			5,232	1.6	na	na	na	7,832	1.7
Biratnagar	8,060	3.4	35,355	10.5	27,295	338.65	17.85	45,100	9.8
Dharan			13,998	4.2	na	na	na	20,503	4.4
Bhadrapur								7,499	1.6
Malangwa	5,551	2.3	6,721	2.0	1,170	21.08	2.15		
Matihani			5,073	1.5	na	na	na		
All urban	238,275	100.0	336,222	100.0	97,947	41.11	4.40	461,938	100.0
Nepal	8,256,625		9,412,996		1,156,371	14.01	1.65	11,555,983	

Sources: Nepal, Department of Statistics (1957: app.); Nepal, CBS (1967: vol. 7, table 19); Nepal, CBS (1975: vol. 5, table 39); Nepal, CBS (1984: vol. 3, table 3).

Note: Percentages may not sum to 100 because of rounding.

na—not applicable.

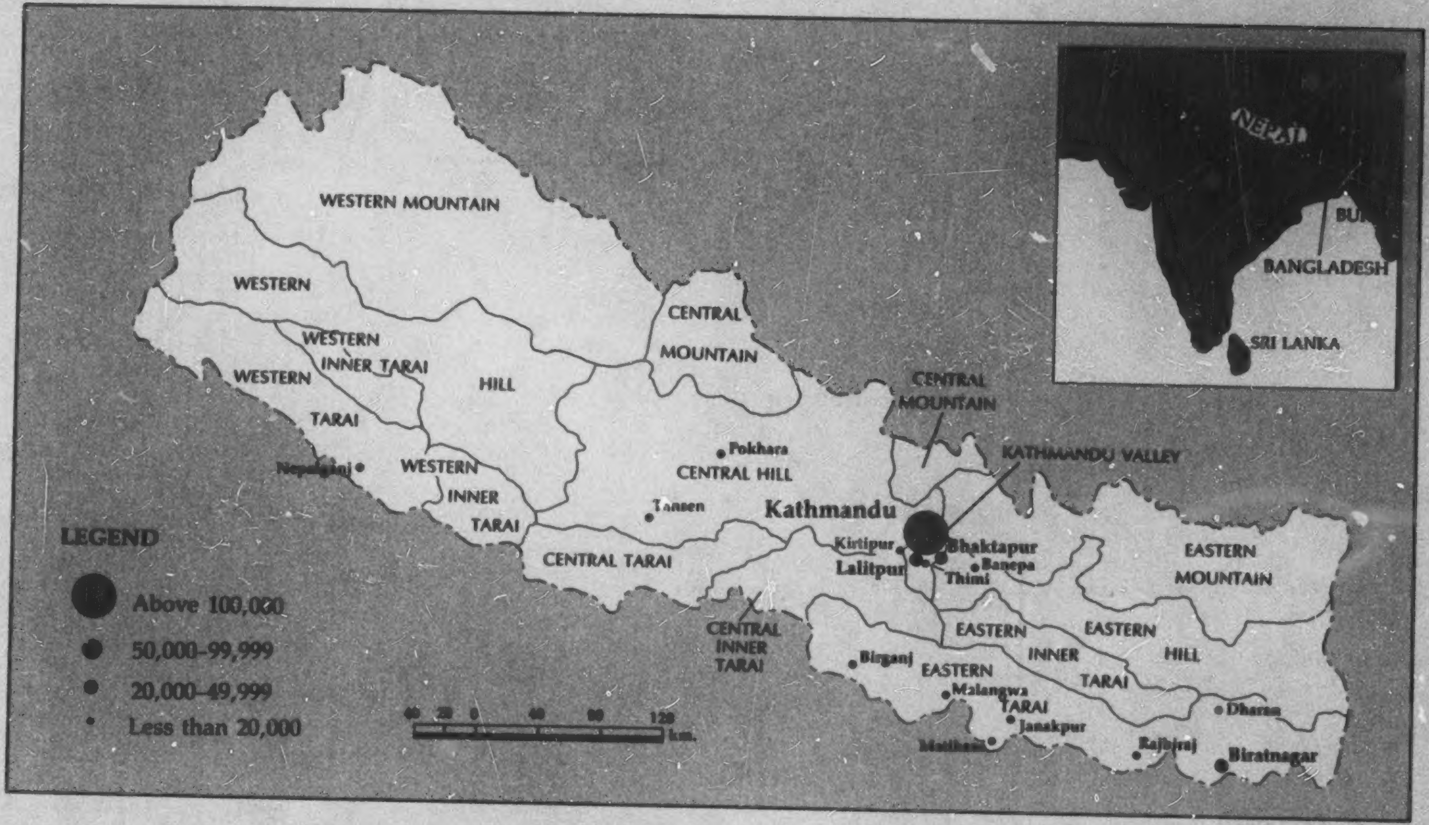
Tarai	59,944	58.83	4.74	412,977	43.2	251,140	155.18	9.82
Nepalganj	7,706	48.72	4.05	34,015	3.6	10,492	44.60	3.76
Mahendranagar				43,834	4.6	na	na	na
Dhangadhi				27,274	2.9	na	na	na
Butwal	na	na	na	22,583	2.4	9,768	76.22	5.83
Sidharthanagar	na	na	na	31,119	3.3	13,847	80.17	6.06
Birganj	2,230	20.71	1.90	43,642	4.6	30,643	235.73	12.88
Janakpur	5,366	60.10	4.82	34,840	3.6	20,546	143.74	9.32
Lahan				13,775	1.4	na	na	na
Rajbiraj	2,600	49.69	4.12	16,444	1.7	8,612	109.96	7.70
Biratnagar	9,745	27.56	2.46	93,544	9.8	48,444	107.41	7.57
Dharan	6,505	46.47	3.89	42,146	4.4	21,643	105.56	7.47
Bhadrapur	na	na	na	9,761	1.0	2,262	30.16	2.67
Malangwa								
Matihani								
All urban	125,716	37.39	3.23	956,721	100.0	494,783	107.11	7.55
Nepal	2,142,987	22.77	2.07	15,022,839		3,466,856	30.00	2.66

In 1961 three new urban areas were added in the Eastern Tarai. Three Hill localities were also designated urban—two in the Central Hills and one in the Eastern Hills close to the valley (Map 4). Of the 16 designated urban places, five were in the Kathmandu Valley. The share of the valley in the total urban population decreased to 64.9 percent while that of the Tarai increased to 30.3 percent. The Tarai had 27.3 percent of the urban population in localities with over 10,000 people.

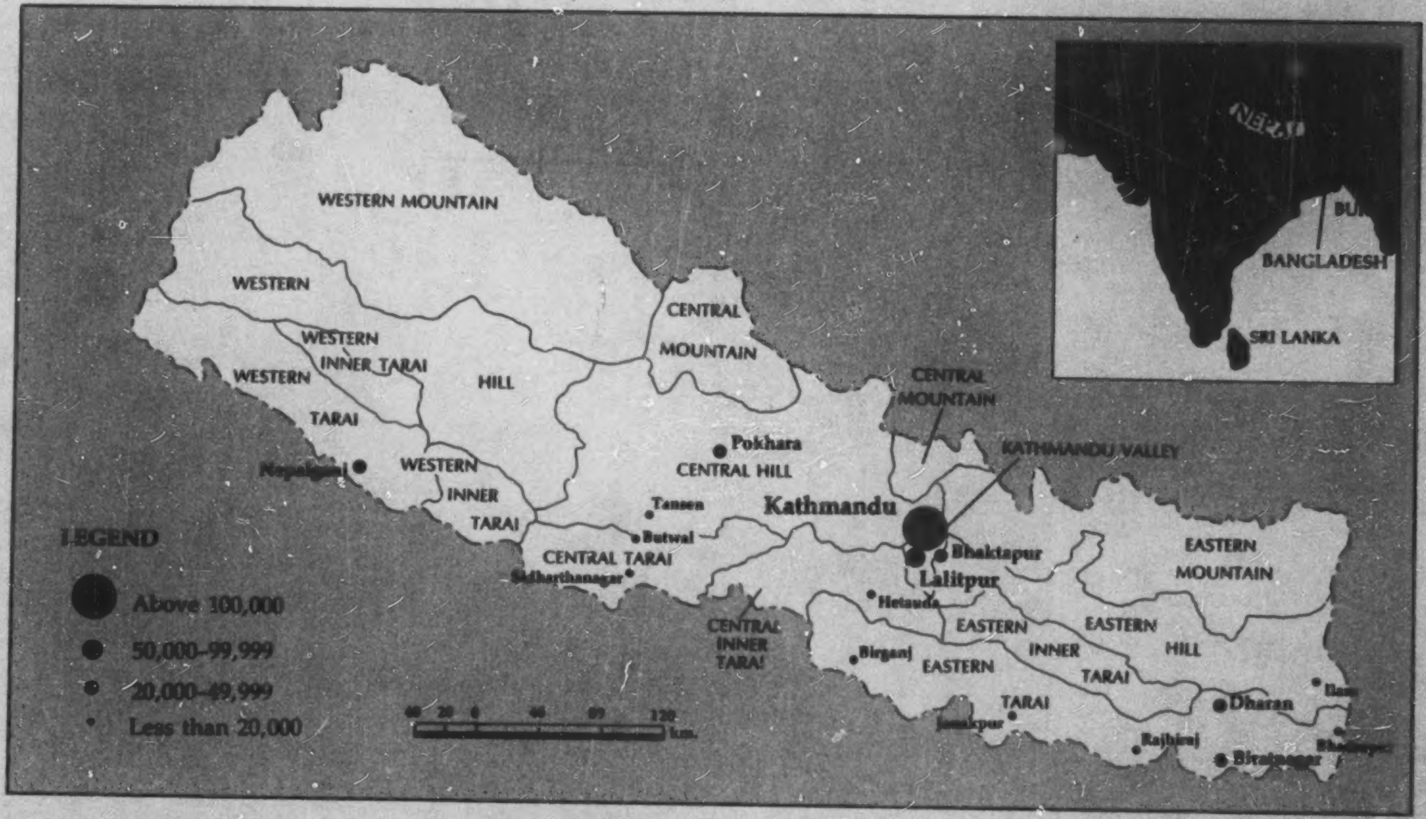
During the first intercensal period the Tarai experienced the highest annual growth in urban population (11.88 percent). It also had the highest growth rate among towns with over 10,000 people (15.44 percent). This phenomenal growth was really contributed by the growth of only one Eastern Tarai town: Biratnagar, the third-largest urban place in the country in 1961. In contrast the capital city of Kathmandu with 36 percent of the total urban population not only experienced a decline in its share of urban population but also had an annual growth rate much lower than the average urban growth rate for the period.

The 1971 census listed 16 localities as urban. Five of the 16 urban places of 1961—Kirtipur and Thimi in the Kathmandu Valley, Banepa in the Eastern Hills, and Malangwa and Matihani in the Eastern Tarai—were declassified. Five new localities—Ilam in the Eastern Hills, Hetauda in the Central Inner Tarai, Butwal and Sidharthanagar (Bhairawa) in the Central Tarai, and Bhadrapur in the Eastern Tarai—were inducted as urban localities (Map 5). The share of Tarai towns in the total urban population increased to 35 percent. The urban growth rate for the country as a whole decreased from 4.40 to 3.23 percent during the 1961-71 period. Much of it was contributed by the lower growth rate of Tarai urban places. While Biratnagar, the fastest-growing town in the preceding decade, experienced a drastic decline in its growth rate, Pokhara in the Central Hills recorded an impressive annual growth of 14.31 percent due primarily to annexation of rural peripheries.

Altogether 23 *panchayats* were designated urban in 1981 (Map 6). Only two of the designated urban places (Ilam and Bhadrapur) had a population of less than 10,000. The national population in designated urban places more than doubled during the 1971-81 decade. The average annual urban growth rate for the period was 7.5 percent. Two new towns (Mahendranagar and Dhangadhi) were added in the Western Tarai, one (Dhankuta) in the Eastern Hills, one (Lahan) in the Eastern Tarai, one (Bharatpur) in the Central Inner Tarai, and two (Birendranagar and Tribhuvannagar) in the Western Inner Tarai. The Western Inner Tarai recorded an urban population for the first time. A rather dramatic rise in urban growth contributed partly by the annexation of outlying rural areas within urban limits was seen in all comparable urban areas between 1971 and 1981. A growth rate of over 7 percent was recorded in the Eastern Tarai towns of Birganj, Janakpur,


NEPAL
BUR
BANGLADESH
SRI LANKA
WESTERN MOUNTAIN
WESTERN
WESTERN
INNER TARAI
WESTERN
TARAI
HILL
Nepalganj
WESTERN
INNER
TARAI
CENTRAL
MOUNTAIN
Pokhara
CENTRAL HILL
Tansen
CENTRAL TARAI
Kathmandu
CENTRAL
MOUNTAIN
KATHMANDU VALLEY
Kirtipur
Lalitpur
Bhaktapur
Thimi
Banepa
CENTRAL
INNER
TARAI
EASTERN
MOUNTAIN
EASTERN
INNER
TARAI
EASTERN
HILL
Birganj
EASTERN
TARAI
Malangwa
Janakpur
Matihani
Rajbiraj
Dharan
Biratnagar
LEGEND
Above 100,000
50,000–99,999
20,000–49,999
Less than 20,000
40 20 0 40 80 120
km.

Map 4. Distribution of urban places in Nepal: 1961


WESTERN MOUNTAIN
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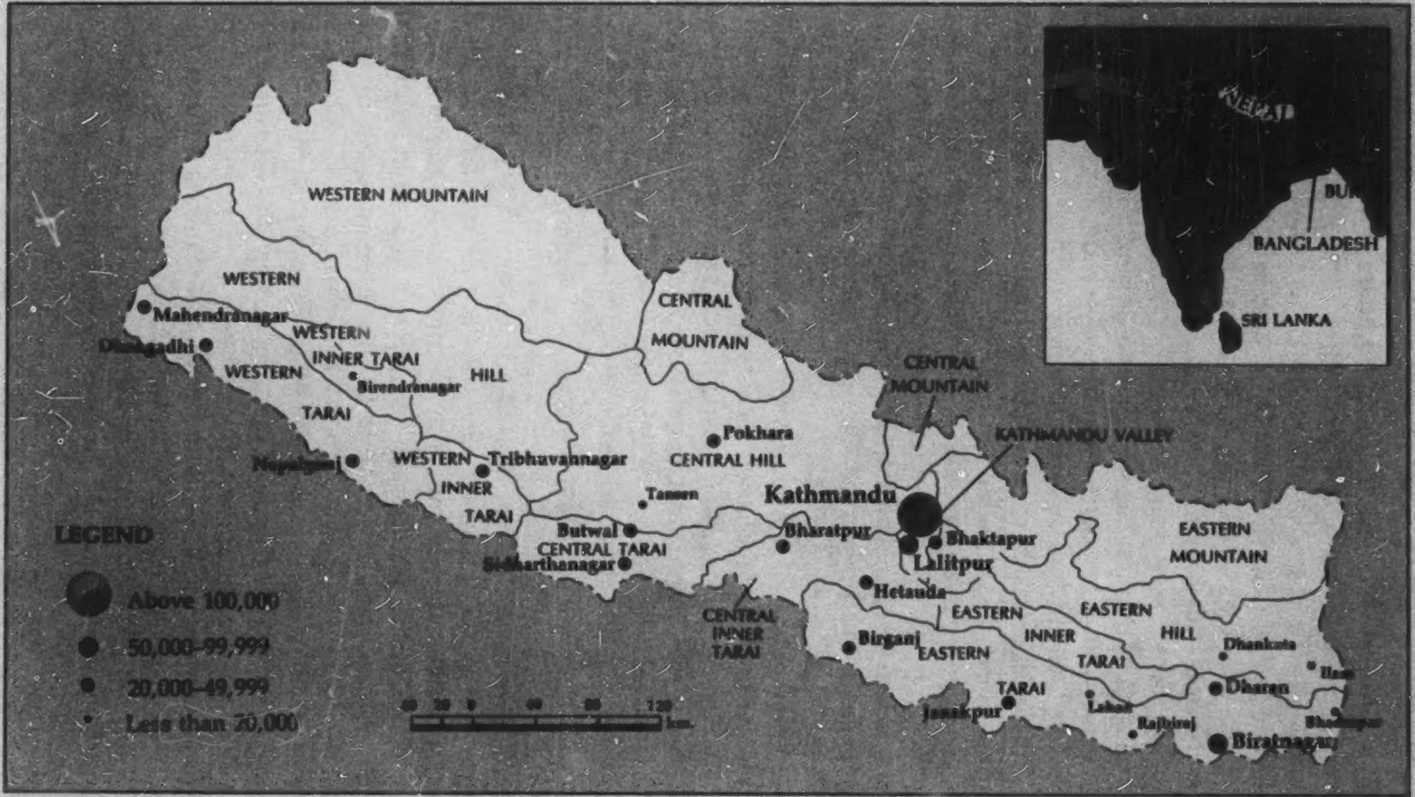
HILL
WESTERN INNER TARAI
CENTRAL MOUNTAIN
Pokhara
CENTRAL HILL
Tansen
Butwal
CENTRAL TARAI
Siddharthanagar
Nepalganj
CENTRAL MOUNTAIN
KATHMANDU VALLEY
Kathmandu
Bhaktapur
Lalitpur
Hetauda
CENTRAL INNER TARAI
Birganj
EASTERN
EASTERN MOUNTAIN
EASTERN HILL
EASTERN INNER TARAI
EASTERN TARAI
Janakpur
Rajbiraj
Dharan
Ilam
Biratnagar
Bhadrapur
NEPAL
BU
BANGLADESH
SRI LANKA
LEGEND
Above 100,000
50,000–99,999
20,000–49,999
Less than 20,000
40 20 0 40 80 120
km.

Map 5. Distribution of urban places in Nepal: 1971


WESTERN MOUNTAIN
WESTERN
Mahendranagar
Dhangadhi
WESTERN
INNER TARAI
WESTERN
Birendranagar
TARAI
HILL
Nepalganj
WESTERN
Tribhuvannagar
INNER
TARAI
CENTRAL
MOUNTAIN
Pokhara
CENTRAL HILL
Tansen
Butwal
CENTRAL TARAI
Siddharthanagar
Bharatpur
Kathmandu
CENTRAL MOUNTAIN
KATHMANDU VALLEY
Bhaktapur
Lalitpur
Hetauda
CENTRAL INNER TARAI
Birganj
EASTERN
EASTERN
INNER
TARAI
EASTERN
TARAI
Janakpur
Lahan
Rajbiraj
EASTERN HILL
Dhankuta
Ilam
Dharan
Biratnagar
Bhadrapur
EASTERN MOUNTAIN
NEPAL
BU
BANGLADESH
SRI LANKA
LEGEND
Above 100,000
50,000–99,999
20,000–49,999
Less than 20,000
40 20 0 40 80 120 km.

Map 6. Distribution of urban places in Nepal: 1981

Biratnagar, Dharan, and Rajbiraj. Hetauda in the Central Inner Tarai and Pokhara and Tansen in the Central Hills show similar growth rates.

The highest absolute increase in urban population during the decade was seen in the Tarai, but the highest percentile increase was in the Inner Tarai. The rapid growth of the Tarai and Inner Tarai towns resulted in a significant decline in Kathmandu's share of the total urban population. Only 38 percent of the country's urban population was in the valley towns in 1981. For the first time over 50 percent of the urban population was recorded in the Tarai and Inner Tarai towns. Birganj, Janakpur, Biratnagar, and Dharan—four Eastern Tarai towns—together accounted for 48.29 percent of the absolute growth in Tarai towns during the decade. Biratnagar in the Tarai superseded Lalitpur as the second-largest town in Nepal.

The last three decades have therefore witnessed a relatively rapid growth in urban places and population in the Tarai as a whole and the central and western subregions of the Inner Tarai in particular. Relative to major Tarai towns the growth of Kathmandu Valley towns appears subdued. It may be noted, however, that Kathmandu experienced the largest absolute growth in population during the last three intercensal decades in general and the 1971–81 decade in particular.

The differential nature of regional urban growth in Nepal can be better appreciated if the population of each locality designated urban in 1981 is traced back to 1952/54. The population of all localities, with the exception of Mahendranagar and Birendranagar, can be traced back from that period (Table 7). Note that the figures for 1952/54 and 1961 pertain to localities as settlement clusters, while those for 1971 and 1981 pertain to *panchayats*.[6]

Hill Towns

All Hill towns have historically remained administrative and commercial centers. As early as 1920 Pokhara was regarded as the "most important city outside the Kathmandu group" and the "second city" in Nepal (Landon 1928: vol. 2, p. 18). It has traditionally been a seat of administration and a sizable military cantonment. In the last three intercensal decades, Pokhara, among the Hill towns, has evidenced the fastest growth. Pokhara had 60.0 percent and 55.9 percent of the total Hill urban population in 1971 and 1981. The phenomenal growth rate of Pokhara during 1961–71 was contributed by considerable overbounding. Six new wards were incorporated in the Pokhara municipal area in 1971 alone and, as a result, significant tracts of outlying rural areas have been included within urban limits.[7]

Part of the rapid growth of Pokhara during 1961–71 and more particularly in the 1970s has been due to the city's increasing importance as the regional development, administrative, and service center. Increased governmental investment in the transport, power, and service sectors, creation of an industrial estate, and the construction of two major highways linking it with the Kathmandu Valley and the Central Tarai have spurred the growth of Pokhara in the 1970s. It is also the only tourist center of importance in the Hill region. In the past 20 years it has developed as a marketing, distribution, and service (administration, health, higher education) center for the hinterland.

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[6] Information on the areal extent is available only for a few urban areas. This has been derived from PADCO (1986a, 1986b).

Tansen is the only hill town that shows consistently rising growth rates not marked by the ups and downs characteristic of other hill towns. It has historically remained an administrative center, but its regional importance in the past derived from its role as a commercial and petty manufacturing center. Although Tansen displayed a spurt of growth in the 1970s, its commercial role ceased to be of regional importance after the construction of the Sunauli–Pokhara highway (Sidhartha Rajmarg), which provides a direct link between Central Tarai towns and the hill town of Pokhara.

Dhankuta, traditionally a major administrative center in the Eastern Hills, used to be shadowed by its proximity to major Tarai urban centers like Dharan and Biratnagar. The remarkable growth of Dhankuta in the 1971–81 decade stems largely from two factors: its designation as the regional development center for the Eastern Development Region and substantial overbounding of the urban limit. The road link between Dhankuta and Dharan, recently completed, will probably enhance its administrative and service function. It does not, however, have the locational advantages of Dharan in the foothills.

Ilam, a hill town in the tea-growing region in the Eastern Hills, is another administrative center. It is also the headquarters for the Mechi zone, but functionally it has served only as an administrative center of district importance. Ilam has not been affected by urban boundary changes. Quite unlike other hill towns, it registered the lowest growth rate in the last intercensal decade. It has a fair-weather road link with the Eastern Tarai; the completion of its permanent road link with the Eastern Tarai may enhance its growth in the future.

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7. An urban area or *nagar panchayat* in Nepal is divided into a number of wards. The number of wards as well as their areal extent have changed from one census to another. So the wards of 1971 are not comparable with the wards of 1981. Census maps at the *panchayat* or ward level were not prepared in the 1971 census. Some attempts were made in the 1981 census, but these maps were not used in census enumerations because they were not field-checked. The Central Bureau of Statistics of Nepal does not have a mapping or cartographic unit even now. It is therefore impossible to create a comparable areal basis for the analysis of urban growth rates during different intercensal periods. Such an exercise would require an intensive field survey, but the population figures would still not be reliable.

Table 7. Population and intercensal growth rate of localities designated urban in 1981

Region	Population				Average annual growth rate (%)			
	1952/54	1961	1971	1981	1952/54–1961	1961–71	1971–81	1952/54–1981
Hills								
Pokhara	3,178[b]	5,413	20,611	46,642	7.90	14.31	8.51	9.71
Tansen	4,705[a]	5,136	6,434	13,125	1.26	2.28	7.39	3.87
Dhankuta	2,097[a]	na	4,137[c]	13,836	na	na	12.83	6.72
Ilam	920[a]	2,835[b]	7,299	9,773	13.32	9.92	2.96	8.49
Kathmandu Valley								
Bhaktapur	32,320	33,877	40,112	48,472	0.67	1.70	1.91	1.51
Kathmandu	106,579	121,019	150,402	235,160	1.83	2.20	4.57	2.97
Lalitpur	42,183	47,713	59,049	79,875	1.78	2.15	3.07	2.39
Inner Tarai								
Birendranagar	na	na	3,362[c]	13,859	na	na	15.22	na
Tribhuvannagar	859[a]	na	5,260[c]	20,608	na	na	14.63	12.49
Hetauda	189[a]	1,712[b]	16,194	34,792	37.00	25.19	7.95	21.31
Bharatpur	91[a]	na	6,942[c]	27,602	na	na	14.80	23.57

Tarai								
Nepalganj	10,813	15,817	23,523	34,015	5.58	4.05	3.76	4.34
Mahendranagar	na	na	6,291[c]	43,834	na	na	21.43	na
Dhangadhi	530[a]	na	5,007[c]	27,274	na	na	18.47	15.71
Butwal	2,597[a]	4,541[b]	12,815	22,583	8.31	10.93	5.83	8.34
Sidharthanagar	1,154[a]	4,530[b]	17,272	31,119	21.50	14.32	6.06	12.98
Birganj	10,037	10,769	12,999	43,642	0.79	1.90	12.88	5.20
Janakpur	7,037	8,928	14,294	34,840	2.68	4.82	9.32	5.67
Lahan	1,777[a]	na	4,780[c]	13,775	na	na	11.16	7.32
Rajbiraj	2,376[a]	5,232	7,832	16,444	9.17	4.12	7.70	6.90
Biratnagar	8,060	35,355	45,100	93,544	17.85	2.46	7.57	8.92
Dharan	4,401[a]	13,998	20,503	42,146	13.72	3.89	7.47	8.10
Bhadrapur	1,478[a]	na	7,499	9,761	na	na	2.67	6.73

Sources: See Table 6.

Note: Growth rates for Eastern Hills and Eastern Tarai have been computed from the initial year 1952; for other localities 1954 has been taken as the initial year.

na—data not available.

a. Nepal, Department of Statistics (1957: app.).

b. Conway and Shrestha (1980).

c. Nepal, CBS (1975: vol. 1, table 5); 1971 and 1981 populations are *panchayat* population.

The growth of hill towns can be attributed largely to their administrative and governmental investment functions. Those that have had the benefit of permanent road links have evidenced rapid growth. Limited infrastructure, and the limited production potential of the immediate hinterland, have largely inhibited the growth of urban areas in the hills.

Kathmandu Valley Towns

The valley towns have experienced comparatively low but steadily increasing growth rates throughout 1954–81. This low growth rate coincides with the absence of significant migration streams to the valley in both the 1961 and 1971 censuses (Banister and Thapa 1981:76), but, as noted earlier, the evidence suggests that Kathmandu in particular was considerably underbounded, at least until 1971, resulting in growth rates that appear lower than would otherwise have been the case.

Kathmandu's municipal boundary has been considerably extended since 1971. In 1981 several village *panchayats* lying east and west of the city were incorporated. Estimates show that Kathmandu's municipal area was 2,671.68 hectares in 1971.[8] It is 4,744.68 hectares at present. Between 1971 and 1981 a total of 2,073 hectares (or 43.7 percent of the present area) was annexed. Kathmandu had 29 wards in 1971; the number increased to 33 in 1981. Moreover, the area of a number of outlying wards has been raised through annexation of outlying rural peripheries (PADCO 1986a:36).

Part of Kathmandu's growth between 1971 and 1981 has undoubtedly been contributed by the extension of urban boundary. This has brought considerable agricultural/rural area and thus population within the city confines. At the same time, considerable tracts of functionally integrated and built-up area that were excluded from the urban limits in 1971 have been brought within the urban confines of Kathmandu.

Kathmandu's growth has been contributed by a number of other factors including the increase in foreign aid and tourism. In 1981 alone more than 112,600 non-Indian tourists visited Kathmandu (Nepal, Dept. of Tourism 1983: tables 1 and 8). There is in addition a large foreign community in Kathmandu. In 1981–82, employment in manufacturing industries in Kathmandu was a little above 10,500 and there were 521 manufacturing establishments mostly within urban limits. Kathmandu remains the prime destination for white-collar employment and the major locale for the convergence of the middle class from all over Nepal. In recent years it has also attracted a sizable immigrant population that thrives on the increasing demand for services generated by an expanding city.

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8. The area of valley towns in 1981 was as follows (PADCO 1986a:50): Kathmandu, 4,744.68 hectares; Lalitpur, 1,578.85 hectares; Bhaktapur, 154.10 hectares.

There has been a notable increase in the population of the city core and adjacent areas in the 1970s. Infilling of formerly vacant or agricultural land within city limits, and expansion of the built-up area along road corridors, have been quite rapid. The built-up area as a percentage of Kathmandu's area was only 17.8 percent in 1954; by 1981, however, it was 55.8 percent.[9] The density in the 10 core wards of Kathmandu is above 400 persons per hectare. Two of these wards have approached densities as high as 1,200 persons per hectare—an extremely high density considering that Kathmandu is not characterized by high-density, high-rise buildings, a feature of most Western cities.

Relative to Kathmandu, no major extension of the boundary of Lalitpur *nagar panchayat* occurred during 1971–81. Therefore Lalitpur's growth has been considerably less affected by the extension of urban boundaries. The increased growth rate of Lalitpur in the 1970s has been due primarily to its proximity to Kathmandu. In the 1970s Kathmandu and Lalitpur have functionally developed as twin cities. Some of the national-level offices that were located in Kathmandu have also moved to Lalitpur. Densification has been visible in the core as well as in outlying areas. In 1981, seven of the 22 wards of Lalitpur had densities above 400 persons to the hectare. Two wards had densities above 800 persons to the hectare. The rise in built-up area and the reduction of agricultural land within city limits has been quite visible.[10]

In comparison the growth of Bhaktapur has been arrested by several factors. The construction of Arniko highway (which connects Kathmandu Valley to Lhasa, the capital of the Tibet region of China) and the loss of the traditional trade with Tibet have seriously affected the town's economy. The growth rate of Bhaktapur's population since 1971, which is roughly equal to its own natural growth rate, has most likely been contributed by better commuting access to Kathmandu (made possible by the electric trolley buses between Kathmandu and Bhaktapur), the rise in tourism, and the injection of development aid (through the Bhaktapur Development

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9. The increase in the built-up area of Kathmandu and Lalitpur in different periods provides an idea of the growth pattern of these towns. The figures have been computed from aerial photographs of different periods. The built-up area of Kathmandu and Lalitpur as a percentage of the present area of the towns was 17.8 and 13.4 percent respectively in 1954. In 1981 this proportion had gone up to 55.8 percent in Kathmandu and 40.7 percent in Lalitpur. Figures for Bhaktapur are not available (PADCO 1986a:51).

10. Kathmandu and Lalitpur have considerable tracts of agricultural land within urban limits, though the proportion of such land is on the decline. Agricultural land in Kathmandu and Lalitpur as a percentage of the present area of the towns was 66.3 and 71.6 percent respectively in 1971. By 1981 this proportion had gone down to 40.3 percent in Kathmandu and 51.9 percent in Lalitpur.

Project). Bhaktapur was not much affected by the boundary changes that took place between 1971 and 1981.

Bhaktapur is the smallest and the densest among Kathmandu Valley towns. In 1981 eight of the 17 wards had densities above 400 persons per hectare. Unlike Kathmandu and Lalitpur where 17 and eight of the 22 and 33 wards respectively had densities below 100 persons per hectare, all 17 wards in Bhaktapur had densities above 100 persons to the hectare. Because of differential changes in urban boundaries since 1971 Kathmandu, the fastest-growing town in the valley, has the lowest gross density.[11]

Inner Tarai Towns

Inner Tarai towns in general show exceedingly high growth rates among urban places in Nepal. Part of the reason appears to be the low base population of these places as a result of endemic malaria until the early 1960s. As indicated earlier, permanent settlements in the Inner Tarai are a recent phenomenon.

The Central Inner Tarai town of Hetauda had the most phenomenal growth between 1952/54 and 1971 due largely to malaria eradication and its location in the foothills along the road linking the town of Birganj to Kathmandu. It has, since the 1960s, also acquired considerable administrative functions. Governmental investment in infrastructure and power, creation of an industrial estate, and the construction of the east-west highway connecting the Central and Eastern Tarai through this town have all contributed to the rapid growth of Hetauda.

The extent to which boundary changes have contributed to population growth in Hetauda cannot be ascertained. The Hetauda *nagar panchayat* as presently defined incorporates a substantial rural area. The fact that it has an area (5,533 hectares) much larger than that of Kathmandu and a gross density of only 6.2 persons per hectare in 1981 substantiates this contention (PADCO 1986b:3). Hetauda has developed in a low-density, sprawling fashion largely as a result of the north-south and east-west highways. Only 8 percent of the urban area is built up, and the density in built-up areas approaches 48 persons per hectare. Available information indicates that 51 percent of Hetauda's population lives in wards with densities of less than 50 persons per hectare. Hetauda's growth as a settlement has been extremely rapid, although the growth rates (37 percent between 1952/54 and 1961 and 25.19 percent between 1971 and 1981) tend to exaggerate the picture. Hetauda is a typical crossroad town.

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[11] The gross density (persons per hectare) in Kathmandu, Lalitpur, and Bhaktapur was 56.3, 37.4, and 260.3 respectively in 1971. In 1981 the gross density in Kathmandu had slightly decreased due to overbounding. The gross density in 1981 was 49.6 in Kathmandu, 50.6 in Lalitpur, and 314.5 in Bhaktapur.

Bharatpur, another town in the Central Inner Tarai inducted in 1981, also shows a high growth rate in the 1970s. Bharatpur *nagar panchayat* comprises two major settlements: Bharatpur and Narayanghat. The two settlements and the intervening rural area have been incorporated into one urban area. As a result the population figures tend to show exaggerated growth rates. Narayanghat is the commercial and trade center of Chitwan district. Bharatpur is the district headquarters where most of the government offices and service functions are located. Both settlements have grown rapidly in the 1970s, chiefly as a consequence of the east–west highway that passes through them. Both settlements, moreover, grew only after the eradication of malaria in the late 1950s. The recently opened link road between the east–west highway and the Kathmandu–Pokhara highway can be expected to enhance the growth of these twin settlements.

Unlike the Central Inner Tarai towns, the Western Inner Tarai towns do not have the advantage of a productive hinterland nor the direct link with major Tarai towns. While Tribhuvannagar (Ghorahi) has remained a foothill town serving the zonal hinterland for some decades and an administrative and service center, Birendranagar (Surkhet) is of very recent origin. Indeed, it was not a permanently settled area until 1956 and it was not until 1966 that it acquired a sizable population. The present status of Birendranagar owes largely to its designation as the regional development center of the Far Western (now Midwestern) Development Region. It has benefited from governmental investment in construction and services. The road link of these two towns with the east–west highway is likely to enhance their influence in the large Western Hill hinterland. The exceedingly high annual growth rate of over 14 percent in both these towns in the 1970s appears to have been contributed no less by overbounding than by the increase in their administrative and service functions.

Tarai Towns

Urban growth in Nepal has been largely a function of the growth of Tarai towns since 1950. However, significant subregional and locational differences in growth are apparent.

All Eastern Tarai towns, with the exception of Dharan located in the foothills and Lahan along the east–west highway, are border towns. Increase in trade and commercial activities, better infrastructural linkage, a productive agricultural hinterland supporting the growth of agro-based industries, the rapid rise in population as a result of increasing internal as well as international migration streams—all appear to have contributed to the rapid growth of Eastern Tarai towns. Biratnagar, Janakpur, and Birganj, in addition to their commercial and service functions, have a better industrial base by Nepalese standards. The construction of the east–west highway and other north–south link roads has, in the last decade, enhanced the growth and potential of Eastern Tarai towns, in particular Biratnagar, Dharan, Janakpur, and Birganj. In the 1970s Birganj had the highest growth rate (12.88 percent) among Eastern Tarai towns. Extension of urban boundaries between 1971 and 1981 may have contributed to the high growth rates of Eastern Tarai towns. In the meantime these towns have grown quite rapidly both in terms of built-up area and in terms of their trade and commercial functions. All these towns are favorably located with respect to national and international trade and are also administrative centers performing district and zonal functions. The service functions of towns like Biratnagar, Dharan, and Birganj are, however, regional in character. The larger Eastern Tarai towns have high gross densities. Figures available for Dharan show that in 1981 the gross density was 34.1 persons per hectare and over 95 percent of the population lived in wards with densities higher than 50 persons per hectare.

Smaller Eastern Tarai towns like Rajbiraj and Bhadrapur are not favorably located with respect to national and international trade compared to the major towns. Rajbiraj is primarily an administrative center for the district and the zone. Bhadrapur, a commercial center of some importance, has no administrative function. Its growth in the 1970s owes largely to its linkage with the east-west highway. Lahan, a newly reclassified urban center in 1981, is located along the east-west highway. Available evidence indicates that it is grossly overbounded. Only 6.7 percent of the urban area is built up, and the gross density is 7.4 persons per hectare. The high growth rate for this town appears to be more apparent than real. The construction of the east-west highway and north-south link roads has provided a new spatial framework for the growth of Eastern Tarai towns.

In the Central Tarai, Sidharthanagar appears to have grown rapidly in the first two intercensal decades. It is the major commercial gateway to India in the Central Tarai and also an administrative center for the district. Butwal is functionally linked to Sidharthanagar; it is the zonal headquarters and has the advantage of its crossroad and foothill location commanding the Central Hill hinterland. Both these towns have benefited from minor boundary changes but show growth rates lower than the urban average during 1971-81. This statistic is difficult to explain—particularly in view of the growth in infrastructure as well as commercial activity that has taken place in these towns during the period.

The Western Tarai is less productive and sparsely populated relative to the Eastern Tarai. Unlike Eastern Tarai towns such as Birganj, Western Tarai towns have no functional links with Kathmandu. Nepalganj, the long-standing commercial and administrative center in the Western Tarai, shows the lowest growth rate among principal Tarai towns in the last three decades. It is by far the most important regional service center in the Western Tarai but lacks permanent road access to its immediate Hill region. Over one-fifth of the area of Nepalganj is built up and has a gross urban density of 26.8 persons per hectare. Some 88 percent of Nepalganj's population lives in wards with densities of above 100 persons to the hectare. Nepalganj does not appear to have benefited from the urban boundary changes that took place between 1971 and 1981. The low growth rate of Nepalganj is nevertheless surprising in view of the relative increase in the population of the Western Tarai since the 1960s.

In contrast to Nepalganj two other newly reclassified towns—Mahendranagar and Dhangadhi—show exceedingly high annual growth rates (21.43 and 18.47 percent). Mahendranagar, in particular, is a new settlement and indeed was a tropical wilderness until 1962 when the headquarters of the Kanchanpur district was moved there from Belauri. It has acquired regional service functions in the last few years. But these service functions do not justify a population of nearly 44,000, which ranked it as the sixth-largest town in Nepal in 1981. Dhangadhi is a market center and has links with India as well as the hills through the north–south Dhangadhi–Dandeldhura highway. The high growth rates for both these towns have resulted mainly from excessive overbounding. In 1981, for example, Dhangadhi had an area of 8,603 hectares (compared to 4,744 hectares for Kathmandu) but a gross density of only 3.2 persons per hectare. Furthermore, 87 percent of Dhangadhi's population lived in wards with less than 50 persons per hectare. Note that most of the newly reclassified urban places in each period show growth rates comparatively higher than those of older towns.

The preceding discussion brings to light the inadequacy of the urban data base in explaining the ups and downs in the intercensal growth rates of most Nepalese towns. It also indicates the role of the expansion of infrastructure, administrative function, and migration in the growth profile of Nepalese towns. Although there are significant regional and locational differences in urban growth rates, not all of them can be explained by these characteristics alone. The excessively high urban growth rates seen between 1971 and 1981 should not therefore be taken at face value. Though the statistical evidence showing the contribution of annexation of rural peripheries to urban population growth is not available, it appears likely that much of the urban growth, particularly in newly reclassified areas, might really be spurious and an artifact of the extension of urban boundaries effected after 1975. Moreover, high growth rates for smaller towns are in part a result of lower base population. Between 1952/54 and 1981 only six towns show consistently rising growth rates—Janakpur and Birganj in the Eastern Tarai, Tansen in the Central Hills, and the three towns of the Kathmandu Valley.

DISTRIBUTION OF URBAN POPULATION BY SIZE CLASS OF URBAN CENTERS

The distribution of population by size class of urban settlements is an indicator of the nature of urban growth. The theoretical basis for size-class classification derives from a good deal of empirical evidence showing a positive correlation between city size and functional complexity in both developed and developing countries (Berry and Horton 1970). But the cutoff points for size-class classification of urban areas have remained controversial. In the Nepalese case a variety of cutoff points have been used or suggested (Shrestha 1981:149; C. B. Shrestha 1982:1–11; Nepal, LCRC, 1984:35–37; Nepal, NPC, 1984). The size-class classification is based solely on population. The weaknesses inherent in the definition of urban areas in Nepal therefore tend naturally to reflect on such a classification. Subject to these limitations I have used a fourfold classification of urban areas by size class to analyze the distribution and growth of urban population. Class I towns are those with a population over 100,000. Class II and III towns have lower limits of 50,000 and 20,000 respectively. Class IV towns have a population of less than 20,000. This classification scheme is decidedly arbitrary but closely follows the size-class categories used in other countries of the region. Note that the definition of urban areas in Nepal effectively excludes areas with less than 9,000 population.

Recent literature on urbanization has focused considerable attention on small and medium-size cities and towns. In much of the literature terms like small, medium, intermediate, and secondary cities have been used—often with different population size connotations (Abeysekera 1980; Mathur 1982; Rondinelli 1983:47–84; Hugo and Mantra 1983: 10–32; Detlef Kammeier and Swan 1984). If recent literature is any guide almost all the towns in Nepal, with the possible exception of Kathmandu, would fall in the small town category. In the Nepalese context, however, it seems more appropriate to use the term "city" for a class I urban place. Class II and III urban places will be referred to as "large" and "medium" towns. The term "small" will be used for towns with a population of less than 20,000. The definition of urban places effectively restricts the recognition of small towns with a population of less than 10,000. Therefore the decline in the number as well as population in small towns in Nepal evident from census figures (Table 8) is more a reflection of the lack of a statistical base than the declining importance of small towns. As the nature of the settlement distribution in Nepal illustrates, small towns and market centers play a considerable role in providing lower-order central-place services to the vast rural hinterland (Shrestha 1973–74:19–39; Nepal, GIC, 1984; New Era 1985).

The distribution of designated urban places by size class of towns since 1952/54 reveals that the proportion of the urban population in medium and large towns has increased over time and the proportion in small towns has

Table 8. Distribution of urban population by size class by geographic region: Nepal, 1952/54–1981

	Hills		Kathmandu Valley		Inner Tarai		Tarai		Nepal	
Size class	No. of places	% of urban population	No. of places	% of urban population	No. of places	% of urban population	No. of places	% of urban population	No. of places	% of urban population
1952/54										
I			1	44.7					1	44.7
II										
III			2	31.3					2	31.1
IV			2	6.6			5	17.4	7	24.0
1961										
I			1	36.0					1	36.0
II										
III			2	24.3			1	10.5	3	34.8
IV	3	4.8	2	4.6			7	19.8	12	29.2
1971										
I			1	32.6					1	32.6
II			1	12.8					1	12.8
III	1	4.5	1	8.7			3	19.3	5	32.4
IV	2	3.0			1	3.5	6	15.7	9	22.2
1981										
I			1	24.6					1	24.6
II			1	8.3			1	9.8	2	18.1
III	1	4.9	1	5.1	3	8.7	8	29.2	13	47.8
IV	3	3.8			1	1.4	3	4.2	7	9.5

Sources: Nepal, Department of Statistics (1957: app.); Nepal, CBS (1967: vol. 2, table 4); Nepal, CBS (1975: vol. 5); Nepal, CBS (1984: vol. 2, table 3).

Note: For population of size classes, see text. Percentages may not sum to 100 because of rounding.

decreased (Figure 2). In 1952/54 less than one-third of the urban population of Nepal was in medium towns. The phenomenon of large towns was conspicuous by its absence in 1952/54 as well as 1961. In 1981, however, two-thirds of the urban population of Nepal was in medium and large towns and less than 10 percent was in small towns. Small towns in general characterize the Hill region while medium towns dominate the Tarai and the Inner Tarai. Of the two large towns in the country in 1981, one was in the Tarai. The rapid growth of medium towns in the Tarai indicates that the graduation effect (older, centrally placed towns grow faster and graduate into a higher class) is more evident here than in other regions. As a consequence the share of the city in the urban population has steadily declined over the years.

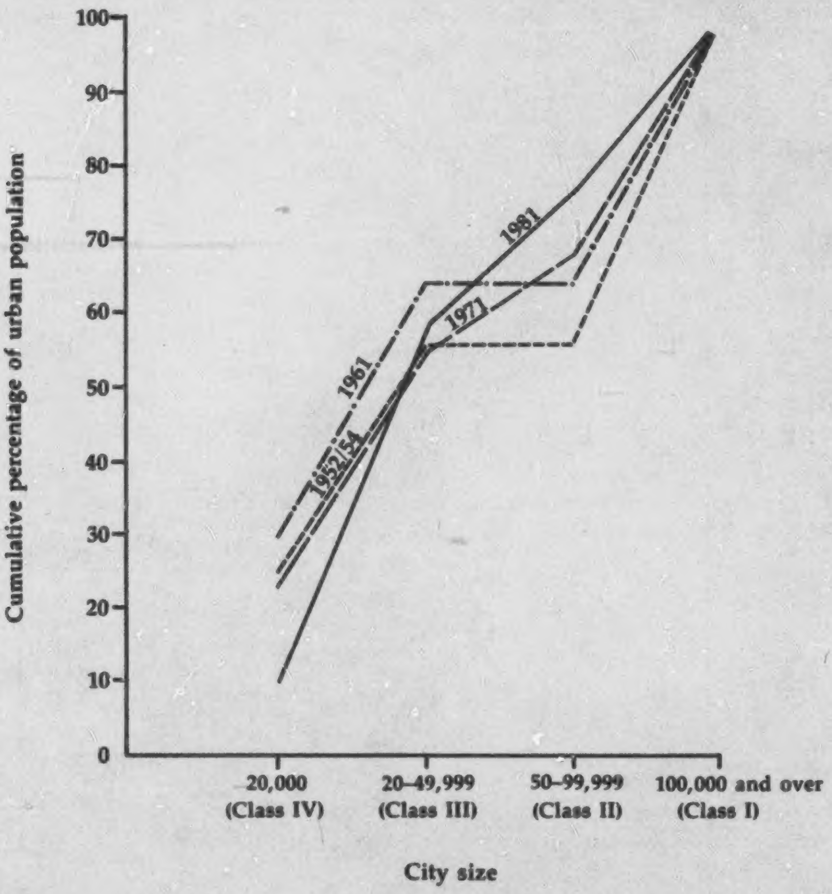

Figure 2. City size distribution in Nepal: 1952/54–1981

A phenomenal decline in the growth rate of small towns is seen between 1952/54 and 1981 (Table 9). This decline is contributed partly by the truncated definition of urban places. The resurgence of medium towns appears to be a phenomenon of only the last intercensal decade. From a low annual growth rate of 2.51 percent between 1961 and 1971, the medium towns registered a rate of 11.81 percent between 1971 and 1981. Have medium towns really grown faster than small towns in Nepal, or are we seeing an artifact of the overbounded nature of 1981 urban places? This question can be evaluated by tracing the shift in size class of urban places in different intercensal decades.

Shifts in Urban Size Classes

Between 1952/54 and 1961 nine out of 10 urban places retained the same size class; only one urban place (Biratnagar) jumped one class to become a medium town. Six new urban places were added to the small town class (Table 10).

Between 1961 and 1971 only seven of the 16 urban places retained the same status. Five previously urban places were declassified and five new areas were inducted as urban areas. All the new entrants (Hetauda, Sidharthanagar, Butwal, Bhadrapur, and Ilam) were in the small town class. All together four of the 1961 urban areas graduated upward.

Ten of the sixteen 1971 urban places retained the same status in 1981. Of the nine urban places in the small town class in 1971, five (Hetauda, Butwal, Sidharthanagar, Birganj, and Janakpur) became medium towns, and four small towns (Tansen, Ilam, Rajbiraj, and Bhadrapur) retained the same status. One medium town (Biratnagar) became a large town. In addition to these shifts, four altogether new areas (Bharatpur, Tribhuvannagar, Dhangadhi, and Mahendranagar) appeared as medium towns. Moreover, three new areas (Birendranagar, Lahan, and Dhankuta) appeared as small towns. Because of the truncated definition of urban areas there were no entrants into the small town class. As a consequence the number of medium towns went up to 13 and comprised 56.5 percent of all urban places and 47.9 percent of all urban population. In 1981, some 30.4 percent of the urban places consisted of newly reclassified urban places. These towns harbored 16.8 percent of the urban population.

This phenomenal flux in the size class of urban areas, contributed in part by reclassification, makes it difficult to draw conclusions about the real contribution of towns of different sizes to the urban growth of Nepal. Unlike urban growth in India, Pakistan, or Bangladesh, Nepalese urban growth has been caused largely by the growth in medium and not large towns and cities.

Table 9. Urban growth rate by size class of urban centers: Nepal, 1952/54–1981

Size class	1952/54	1961	1971	1981	Growth rate 1952/54	Growth rate 1961-71	Growth rate 1971–81
I. 100,000 and over	106,579	121,019	150,402	235,160	1.83	2.20	4.57
II. 50,000–99,999			59,049	173,419			11.38
III. 20,000–49,999	74,503	116,945	149,849	457,569	5.80	2.51	11.81
IV. Less than 20,000	57,193	98,258	102,638	90,573	7.00	0.44	-1.24
Total	238,275	336,222	461,938	956,721	4.40	3.23	7.55

Note: Growth rate for Kathmandu has been computed for 1954–61. The census of 1952/54 was undertaken in Kathmandu in 1954.

Table 10. Shifts in size class of urban places: Nepal, 1952/54–1981

	1952/54–1961			1961–71			1971–81				
Size class	Distribution in 1952/54	Retained same class	Up one class	Distribution in 1961	Retained same class	Up one class	Distribution in 1971	Retained same class	Up one class	Up two classes	Distribution in 1981
I. 100,000 and over	1	1	0	1	1	0	1	1	0	0	1
II. 50,000–99,999	0	0	0	0	0	1	1	1	1	0	2
III. 20,000–49,999	2	2	1	3	2	3	5	4	5	4[a]	13
IV. Less than 20,000	7	6	6[a]	12	4	5[a]	9	4	3[a]	0	7
Total	10	9	7	16	7	9	16[b]	10	9	4	23
Percentage		56.2	43.8	100	43.8	56.2	100	43.5	39.1	17.4	100

a. New additions during the intercensal period.

b. Five localities belonging to size class IV (less than 20,000) designated as urban in 1961 were deleted from the list of urban areas in 1971 and five new areas were inducted as urban.

Rank Hierarchy of Urban Places

Changes in the rank hierarchy of urban places reflect the phenomenal state of flux in the rank order of towns (Table 11). The rank order of the first four urban areas in the country has remained relatively stable since 1961. The state of flux is evident in the middle and lower rungs of the rank hierarchy. In the last three intercensal decades only two towns (Biratnagar and Pokhara) have consistently risen in rank. Biratnagar jumped from seventh to third place between 1952/54 and 1961 and from third to second place between 1971 and 1981. Pokhara moved from the thirteenth to sixth place between 1961 and 1971 and to fifth place between 1971 and 1981. Because of new entrants in the middle rungs of the hierarchy the position of most urban areas in the rank order has been considerably disturbed.

Table 11. Changes in rank hierarchy of urban places: Nepal, 1952/54–1981

1952/54	1961	1971	1981
1. Kathmandu	1. Kathmandu	1. Kathmandu	1. Kathmandu
2. Lalitpur	2. Lalitpur	2. Lalitpur	2. Biratnagar
3. Bhaktapur	3. Biratnagar	3. Biratnagar	3. Lalitpur
4. Nepalganj	4. Bhaktapur	4. Bhaktapur	4. Bhaktapur
5. Birganj	5. Nepalganj	5. Nepalganj	5. Pokhara
6. Thimi	6. *Dharan*	6. Pokhara	6. *Mahendranagar*
7. Biratnagar	7. Birganj	7. Dharan	7. Birganj
8. Kirtipur	8. Thimi[a]	8. *Sidharthanagar*	8. Dharan
9. Janakpur	9. Janakpur	9. *Hetauda*	9. Janakpur
10. Malangwa	10. Malangwa[a]	10. Janakpur	10. Hetauda
	11. Kirtipur[a]	11. Birganj	11. Nepalganj
	12. *Banepa*[a]	12. *Butwal*	12. Sidharthanagar
	13. *Pokhara*	13. Rajbiraj	13. *Bharatpur*
	14. *Rajbiraj*	14. *Bhadrapur*	14. *Dhangadhi*
	15. *Tansen*	15. *Ilam*	15. *Butwal*
	16. *Matihani*[a]	16. Tansen	16. *Tribhuvannagar*
			17. Rajbiraj
			18. *Birendranagar*
			19. *Dhankuta*
			20. *Lahan*
			21. Tansen
			22. Ilam
			23. Bhadrapur

Note: Italicized names are new entrants in respective census years.

a. Towns declassified in 1971.

This change in rank hierarchy indicates that the evolution of urban places from lower to higher rank order cannot be realistically discerned on the basis of present information. Overbounding of urban places, particularly newly reclassified urban places, appears to be responsible for the substantial changes in rank/size relationships of urban areas in Nepal.

The change in the ratio of actual to expected population size for urban areas in Nepal following the rank/size rule (Table 12) shows that the ratio for almost all towns was below 100 in the 1952/54, 1961, and 1971 censuses. This result indicates a high level of primacy. In 1981 there was an unprecedented increase in the ratio for towns between ranks 6 and 21. In the 1970s towns in the middle rank tended to grow faster than towns in the

Table 12. Ratio of actual to expected population size for urban areas: Nepal, 1952/54–1981

Rank	1952/54	1961	1971	1981
1	100.0	100.0	100.0	100.0
2	79.2	78.9	78.5	79.6
3	91.0	87.6	90.0	101.9
4	40.6	112.0	106.7	82.4
5	47.1	65.3	78.2	99.2
6	48.7	69.4	82.2	111.8[a]
7	52.9	62.2	95.4	129.9
8	52.8	64.2	80.4	143.4
9	59.4	66.4	96.9	133.3
10	52.1	55.5	95.0	148.0
11		52.4	95.1	159.1
12		56.4	102.2	153.8
13		58.1	67.7	152.6[a]
14		60.5	69.8	162.4[a]
15		63.7	72.8	144.0
16		67.1	68.4	140.2[a]
17				118.9
18				106.1[a]
19				111.8[a]
20				117.2[a]
21				117.2
22				91.4
23				95.5

Note: The ratio is computed as $P_k/(P_1/k) \times 100$, where k is the rank, P is the population, and P_1 is the population of the first ranked city.

a. Areas reclassified as urban (*nagar panchayats*) in 1981.

higher rank. While many medium towns in the Tarai have grown in real functional terms, the growth in population has also been contributed by the extension in urban boundary.

Urban Primacy

Urban primacy is generally taken to indicate lower levels of development. In most developing countries urban primacy is seen as the norm and conformity to the rank/size rule as an exception. As early as 1972, El-Shakhs argued that primacy and economic development are related in a curvilinear way—that is, primacy increases with early advances in the level of development, reaches a peak during a transitional period, and decreases with subsequent increases in development (El-Shakhs 1972:30). In recent years Clark's findings have tended to question this relationship in the case of developing countries like India (Clark 1983:1–15). The association of primacy with overurbanization characterized by an influx of migrants to primate cities is, however, well established in the literature.

Measures of primacy for Nepal and selected countries of the region are shown in Table 13. Unlike Bangladesh and Pakistan where both two-city and four-city primacy indices have been on the rise since the 1950s, the primacy values for Nepal have remained remarkably stable. Indeed, the former shows signs of decline in the last intercensal decade. The *z* values for the rank/size distribution of designated urban places in Nepal show a consistently declining trend through each census period. Thus the concentration of urban population in the largest city relative to the smallest city has declined (Goldstein and Sly 1975:59). This trend, given the interregional and urban-oriented migration in Nepal and the relatively stronger basis of urbanization in the Tarai, is likely to continue in the future.

COMPONENTS OF URBAN GROWTH

Urban growth is attributable to three basic components: natural increase (the excess of births over deaths), reclassification (the graduation of rural places into urban places, the emergence of new towns, or the extension of the boundaries of existing urban places), and migration both internal and international. The lack of pertinent data makes it difficult to evaluate these components of urban growth in Nepal. Estimates made by the United Nations (UN 1980:24) for a group of developing countries indicate that for the period 1961-71 the percentage of annual urban growth attributable to internal migration and reclassification in Nepal was 37.2 percent, slightly higher than the comparable figure for India but lower than that of Bangladesh and Sri Lanka (Table 14).

This finding suggests that the natural growth rate contributes substantially to urban growth in developing countries like Nepal. The usual argu-

Table 13. Measures of primacy: South Asia

Country	1950[a]	1960[b]	1970[c]	1981
Nepal				
Two-city index	2.53	2.54	2.55	2.51
Four-city index	1.25 [1.33368]	1.03 [1.19969]	1.04 [1.07809]	1.05 [0.91859]
India				
Two-city index	1.55	1.38	1.18	1.11
Four-city index	0.56	0.68	0.55	0.50
Bangladesh				
Two-city index	1.49	1.53	1.78	2.48
Four-city index	0.90	0.85	1.11	1.58
Pakistan				
Two-city index	1.26	1.48	1.62	1.76
Four-city index	0.84	0.93	0.97	1.07
Sri Lanka				
Two-city index	5.45	4.61	3.63	3.36
Four-city index	2.01	1.87	1.58	1.49

Sources: Nepal, Department of Statistics (1957); Nepal, CBS (1967, 1975, 1984); India, ORGCC (1981); Bangladesh, BBS (1984); Sri Lanka, DOS (1982); Pakistan, PCO (1984).

Note: Figures in brackets for Nepal are Z values for the rank-size distribution of designated urban places. Two-city indices have been computed using the formulation P_1/P_2. Four-city indices have been computed using $P_1/P_2+P_3+P_4$, where P_1 and P_2 are populations in cities of rank 1, 2, and so forth. The Z values for rank-size distribution have been computed by using the formula

$$Z = \frac{\ln (C_1/C_K) \ln K}{(\ln K)^2}$$

where C_1 and C_K are cities in ranks 1, k. See Goldstein and Sly (1975:59).

a. 1952/54 for Nepal; 1953 for Sri Lanka; and 1951 for India, Bangladesh, and Pakistan.

b. 1963 for Sri Lanka; 1961 for other countries.

c. 1972 for Pakistan; 1974 for Bangladesh; and 1971 for other countries.

ment is that while mortality rates tend to be much lower and life expectancy at birth considerably higher in urban areas (as a result of better access to health services), fertility rates tend to be lower but not low enough to offset the effect of dramatic declines in mortality. As a consequence the natural growth rate tends to contribute substantially to urban growth. This was possibly the case in Nepal in the first two intercensal decades, that is, up to the late 1960s.

Fertility studies conducted in Nepal in the 1970s (Demographic Sample Surveys, for example) clearly show that crude birth rate (CBR), total

Table 14. Sources of intercensal growth of urban population (selected countries)

Country	Intercensal period	Annual growth rate	Estimated annual urban rate of natural increase	Estimated annual rate of urban growth from internal migration and reclassification	Estimated percentage of annual growth attributable to internal migration and reclassification
Nepal	1961–71	0.03323	0.02088	0.01235	37.2
India	1961–71	0.03080	0.02173	0.01038	32.3
Bangladesh	1961–74	0.06613	0.02948	0.03665	55.4
Sri Lanka	1963–71	0.04281	0.02196	0.02085	48.7

Source: UN (1980: table 11, p. 24).

fertility rate (TFR), and gross reproduction rate (GRR) for urban areas were about 50 percent lower than in rural areas.[12] Infant mortality, child mortality, and crude death rates are also appreciably lower in urban than in rural areas. These figures suggest that the natural growth rate in urban areas is lower than in rural areas.

Reclassification and Urban Growth

On the basis of existing data the contribution of reclassification (addition of new towns only) to urban growth in Nepal can be broadly assessed (Table 15). The population of reclassified towns constituted 8.86, 13.22, and 16.81 percent of the total urban population in 1961, 1971, and 1981 respectively. The contribution of reclassified towns to the urban growth rate (computed as the percentile difference in the urban growth rate with and without reclassified towns in the three census years) comes to 27.27 percent between 1952/54 and 1961, 45.20 percent between 1961 and 1971, and 25.96 percent between 1971 and 1981. This finding suggests that overall urban growth in the 1961-71 decade was caused largely by the addition of new towns. These figures do not include urban growth resulting from the changes in urban boundaries.

We can determine the contribution of migration and reclassification to urban growth by tracing the growth performance of localities that have remained urban throughout 1952/54–1981. Measure 1 in Table 15 shows that such towns grew at an annual rate of 2.93, 2.36, and 5.13 percent—that is, lower than national urban growth rates in each intercensal period since 1952/54. If we assume that the growth rate of the national population approximates the natural growth rate in each period, the contribution of migration and reclassification to the growth of these towns comes to 43.69 percent between 1952/54 and 1961, 12.29 percent between 1961 and 1971, and 48.15 percent between 1971 and 1981. This finding suggests that reclassification (annexation) and migration contributed the least to the growth of older towns during 1961-71.

Migration and Urban Growth

Urban migration, potentially the most important source of urban growth, cannot be ascertained with any accuracy because of the lack of information. Migration statistics for urban areas were not provided before the 1971 census. The 1971 census allows the identification of only two kinds of interregional lifetime migration streams on the basis of place of birth and place of enumeration data—namely, migration from all areas to urban areas and

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[12] For example, the CBR, TFR, and GRR for urban areas in the 1977-78 Demographic Sample Survey were 29.5, 3.84, and 1.87 respectively. The corresponding figures for rural areas were 46.5, 6.31, and 3.06 (Nepal, CBS, 1987a:198).

Table 15. Reclassification and urban growth: Nepal, 1952/54–1981

Measure	1952/54		1961		1971		1981
1. Population of 1952/54 towns in each census	217,029		273,478		345,479		569,548
2. Annual growth rate		2.93		2.36		5.13	
3. Annual national growth rate		1.65		2.07		2.66	
4. Contribution of migration and reclassification to urban growth (2 – 3 as % of 2)		43.69		12.29		48.15	
5. Population of declassified towns	21,246		32,695				
6. Population of towns reclassified in							
1961			29,779		55,380		118,357
1971					61,079		108,028
1981							160,788
7. Total urban population	238,275		336,222		461,938		956,721
8. Population in reclassified towns as percentage of urban population in each census			8.86		13.22		16.81
9. Annual urban growth rate (of 7)		4.40		3.23		7.55	
10. Urban growth rate without towns reclassified in each census		3.20		1.77		5.59	
11. Contribution of reclassified towns (9 – 10 as % of 9) to urban growth		27.27		45.20		25.96	

from all areas to rural areas. The 1981 census provides information on lifetime migrants to urban areas from all other areas by ecological regions (Mountain, Hill, and Tarai) and development regions. Unfortunately, however, the regional frameworks used in the two censuses are not comparable. Moreover, while interregional migration from all other areas to urban areas derived from 1971 census data excludes intraregional lifetime migrants, urban migrants shown in the 1981 census include all migrants to urban areas. For both periods, therefore, rural-to-urban, urban-to-urban, and urban-to-rural migration streams cannot be traced.

Lifetime migrants from all areas to urban areas constituted 12.2 percent of total interregional 1971 migrants (Table 16). This figure reflects the overwhelmingly rural-to-rural nature of migration in Nepal. The largest proportion (72.8 percent) of migrants to urban areas originated from the Hill/Mountain region. Migrants to other urban areas from the Tarai comprised only 7.7 percent of the total urban-oriented migrants. The Tarai, however, was the destination of 58 percent of the interregional urban migrants from all areas. The Kathmandu Valley was the next important destination for interregional urban migrants (30.4 percent). Net interregional urban-oriented migration to the Kathmandu Valley was positive, though overall net migration to the valley in the 1961-71 period was negative. The Hill region in general lost more population to other urban areas through out-migration than was gained by urban areas of the region. Subregional differences in the pattern of interregional migration to urban areas are notable, but urban-oriented migration in general appears to have followed the same pattern as interregional migration in general.

The growth of the population in the Tarai towns in 1971 was caused largely by the presence of foreign-born as well as interregional migrants. Together the two categories comprised 42.3 percent of the population of the Tarai towns (Table 17) compared to only 21.8 percent in the national urban population. In contrast to the Tarai, foreign-born population constituted only around 2 percent of the population of Hill and Kathmandu Valley towns. The proportion of foreign-born and interregional migrants together was 9.5 percent in the valley and 16.5 percent in the hills.

In 1971 over 84 percent of the total foreign-born population in urban areas were in the Tarai—largely a reflection of the dominance of Indian immigrants in the commercial gateway towns along the open Indo-Nepal border. Interregional migrants, on the other hand, comprised a significant proportion of population in transitional foothill towns like Dharan (32.6 percent), Butwal (48.8 percent), and Hetauda (36.6 percent). The Central and Western Tarai towns like Sidharthanagar (31.7 percent) and Nepalganj (21.2 percent) also had sizable numbers of interregional migrants. Table 17 provides evidence to suggest that, at least in 1971, migration both internal and international remained a major contributor to urban population growth in

Table 16. Interregional migration, total and urban: Nepal, 1971

	Destination						
	Mountain				Hills		
Origin	West	Central	East	Total	West	Central	East
Mountain	8	22	5	35	1,436	2,064	8,405
Urban	0	0	0	0	0	255	57
West		13	5	18	1,428	112	4
Urban		0	0	0	0	12	0
Central	1		0	1	1	602	11
Urban	0		0	0	0	154	0
East	7	9		16	7	1,350	8,390
Urban	0	0		0	0	89	57
Hills	2,028	1,064	5,309	8,401	1,473	10,646	365
Urban	0	0	0	0	0	1,216	8
West	1,928	0	30	1,958		2,710	19
Urban	0	0	0	0		61	1
Central	91	1,000	225	1,316	1,421		346
Urban	0	0	0	0	0		7
East	9	64	5,054	5,127	52	7,936	
Urban	0	0	0	0	0	1,155	
Kathmandu Valley	53	122	682	857	1,350	15,172	4,868
Urban	0	0	0	0	0	4,781	124
Tarai	36	15	389	440	804	1,870	3,860
Urban	0	0	0	0	0	651	73
West	8	0	1	9	713	76	8
Urban	0	0	0	0	0	29	1
Central	11	10	29	50	50	1,426	111
Urban	0	0	0	0	0	444	10
East	17	5	359	381	41	368	3,741
Urban	0	0	0	0	0	178	62
Total (in)	2,125	1,223	6,385	9,733	5,063	29,752	17,498
Urban	0	0	0	0	0	6,903	262
Percentage							

Source: Nepal, CBS (1975: vol. 5, table 40, and vol. 2, pt. 1, table 10).

		Tarai					
Total	Kathmandu Valley	West	Central	East	Total	Total (out)	(%)
11,905	3,762	8,002	4,679	21,309	33,990	49,692	
312	2,535	47	142	1,448	1,637	4,484	(7.3)
1,544	136	7,886	64	33	7,983	9,681	
12	127	12	6	13	31	170	
614	141	16	1,262	61	1,339	2,095	
154	124	5	71	15	91	369	
9,747	3,485	100	3,353	21,215	24,668	37,916	
146	2,284	30	65	1,420	1,515	3,945	
12,484	19,513	60,119	140,503	152,215	352,837	393,235	
1,224	13,457	3,992	10,875	10,919	25,786	40,467	(65.5)
2,729	616	56,389	3,816	242	60,447	65,750	
62	561	3,325	308	67	3,700	4,323	
1,767	8,681	2,928	123,378	2,572	128,878	140.642	
7	6,562	481	10,133	769	11,383	17,952	
7,988	10,216	802	13,309	149,401	163,512	186,843	
1,155	6,334	186	434	10,083	10,703	18,192	
21,390		2,138	12,373	8,726	23,237	45,484	
4,905		743	2,236	4,184	7,163	12,068	(19.5)
6,534	3,165	626	4,196	3,549	8,371	18,510	
724	2,757	201	569	478	1,248	4,729	(7.7)
797	316		467	150	617	1,739	
30	278		108	46	154	462	
1,587	1,141	327		3,399	3,726	6,504	
454	986	100		432	532	1,972	
4,150	1,708	299	3,729		4,028	10,267	
240	1,493	101	461		562	2,295	
52,313	26,440	70,885	161,751	185,799	418,435	506,921	
7,165	18,749	4,983	13,822	17,029	35,834	61,748	(12.2)
(11.6)	(30.4)				(58.0)		

Table 17. Interregional migrants and foreign-born population in urban areas: Nepal, 1971

Urban area	Total	Foreign-born		Native-born			
				Interregional migrants		Nonmigrants	
		No.	%	No.	%	No.	%
Hills	50,538	1,165	2.3	7,165	14.2	42,208	83.5
Hetauda (CH)	16,194	724	4.5	5,923	36.6	9,547	59.0
Pokhara (CH)	20,611	215	1.0	463	2.2	19,933	96.7
Tansen (CH)	6,434	98	1.5	517	8.0	5,819	90.4
Ilam (EH)	7,299	128	1.8	262	3.6	6,909	94.7
Kathmandu Valley	249,563	5,012	2.0	18,749	7.5	225,802	90.5
Bhaktapur	40,112	32	0.1	1,132	2.8	38,948	97.1
Kathmandu	150,402	3,750	2.5	15,751	10.5	130,901	87.0
Lalitpur	59,049	1,230	2.1	1,866	3.2	55,953	94.8
Tarai	161,837	32,703	20.2	35,834	22.1	93,300	57.7
Nepalganj (WT)	23,523	3,246	13.8	4,983	21.2	15,294	65.0
Birganj (CT)	12,999	2,118	16.3	2,086	16.0	8,795	67.7
Sidharthanagar (CT)	17,272	2,817	16.3	5,482	31.7	8,973	52.0
Butwal (CT)	12,815	2,349	18.3	6,254	48.8	4,212	32.9
Bhadrapur (ET)	7,499	3,032	40.4	1,069	14.3	3,398	45.3
Biratnagar (ET)	45,100	14,262	31.6	7,151	15.9	23,687	52.5
Dharan (ET)	20,503	2,354	11.5	6,678	32.6	11,471	55.9
Janakpur (ET)	14,294	1,426	10.0	1,084	7.6	11,784	82.4
Rajbiraj (ET)	7,832	1,099	14.0	1,047	13.4	5,686	72.6
Total urban	461,938	38,800	8.4	61,748	13.4	361,310	78.2

Source: Same as Table 16.

Note: CH = Central Hills; EH = Eastern Hills; WT, CT, and ET stand for Western Tarai, Central Tarai, and Eastern Tarai. The regional division used in providing migration data in 1971 is different from the one used in this study. Nonmigrants also include intraregional migrants to urban areas. Percentages may not sum to 100 because of rounding.

the Tarai towns. The evidence is not so clear in the case of the Kathmandu Valley and Hill towns.

It should be noted, however, that census enumerations in Nepal have been carried out since 1952/54 on a de jure basis—that is, every person is counted on the basis of his or her usual residence (defined as the place where the person has been living continuously for at least six months). This enumeration process effectively excludes all short-term movers. Circulation, an important feature of mobility between highland and lowland and between rural and urban areas in Nepal, is therefore not captured by census data. If such a process of mobility were taken into account, the volume of migration to urban areas would appear much higher than is shown by census information.

As indicated earlier, the 1971 and 1981 data on urban migrants are not comparable. Figures for foreign-born population in urban areas, which are comparable, show that the proportion as well as the number of foreign-born in the urban population decreased from 8.4 percent (38,800) in 1971 to 3.7 percent (35,855) in 1981 (Table 18). This decline in foreign-born population is due primarily to misreporting of place of birth by immigrants who meanwhile have acquired Nepalese citizenship. Citizenship, it may be noted, has been a politically charged issue in the Tarai in general and urban areas in particular since the mid-1970s. The openness of the Indo-Nepal border is guaranteed by the Indo-Nepal Treaty of Peace and Friendship of 1950. Further, the ethnic, cultural, and linguistic affinity between people across the Indo-Nepal border makes it almost impossible to monitor immigration to Tarai urban areas. The rise in the rate of immigration to Tarai towns is evidenced from the National Commission on Population (NCP) survey undertaken in 10 Tarai districts in 1983 (Nepal, NCP, 1983a). The survey reveals that the immigrant population in the Tarai has been rising at an annual rate of 4.2 percent and that 48 percent of the immigrants had Tarai urban localities (designated urban areas as well as small towns and market centers) as their destination.

The 1981 census clearly underreports the number of immigrants in the country in general and urban areas in particular. The increase in the development tempo in the Tarai, the creation of a better infrastructure in the Tarai belt in the last three decades, and the increase in trade and commercial ties between Nepal and India have all contributed to the rise in immigration. The NCP study, for example, reveals that a large proportion of immigrants are skilled or semi-skilled and are for the most part engaged in formal as well as informal activities in the urban economy. A great proportion of the immigrants hail from the states of Bihar and Uttar Pradesh in India, comparatively the least developed among the Indian states.

The 1981 figures on native-born migrants to urban areas appear to be more realistic although, as noted above, these data do not capture short-

Table 18. Foreign-born and internal migrants in urban areas: Nepal, 1981

				Native-born				
		Foreign-born		Lifetime migrants		Nonmigrants		
Urban area	Total	No.	%	No.	%	No.	%	Unstated
Hills	83,376	1,023	1.2	10,041	12.0	72,283	86.7	29
Pokhara	46,642	700	1.5	5,600	12.0	40,339	86.5	3
Tansen	13,125	74	0.6	1,412	10.8	11,628	88.6	11
Dhankuta	13,836	74	0.5	1,986	14.4	11,768	85.1	8
Ilam	9,773	175	1.8	1,043	10.7	8,548	87.5	7
Kathmandu Valley	363,507	3,266	0.9	37,134	10.2	323,052	88.9	55
Bhaktapur	48,472	6	*	1,610	3.3	46,854	96.7	2
Kathmandu	235,160	2,862	1.2	29,127	12.4	203,121	86.4	50
Lalitpur	79,875	398	0.5	6,397	8.0	73,077	91.5	3
Inner Tarai	96,861	1,649	1.7	26,226	27.1	68,948	71.2	38
Birendranagar	13,859	47	0.3	2,048	14.8	11,758	84.8	6
Tribhuvannagar	20,608	35	0.2	1,299	6.3	19,271	93.5	3
Hetauda	34,792	576	1.7	8,753	25.2	25,455	73.2	8
Bharatpur	27,602	991	3.6	14,126	51.2	12,464	45.2	21

Tarai	412,977	29,917	7.2	82,364	19.9	300,245	72.7	451
Nepalganj	34,015	1,021	3.0	1,582	4.7	31,412	92.3	0
Mahendranagar	43,834	782	1.8	12,902	29.4	30,147	68.8	3
Dhangadhi	27,274	1,473	5.4	9,130	33.5	16,658	61.1	13
Butwal	22,583	2,130	9.4	5,310	23.5	15,008	66.5	135
Sidharthanagar	31,119	2,908	9.3	5,874	18.9	22,195	71.3	142
Birganj	43,642	2,834	6.5	5,544	12.7	35,254	80.8	10
Janakpur	34,840	2,884	8.3	5,528	15.9	26,421	75.8	7
Lahan	13,775	543	3.9	1,415	10.3	11,817	85.8	0
Rajbiraj	16,444	1,251	7.6	1,802	11.0	13,388	81.4	3
Biratnagar	93,544	9,007	9.6	14,282	15.3	70,220	75.1	35
Dharan	42,146	3,593	8.5	16,451	39.0	22,003	52.2	99
Bhadrapur	9,761	1,491	15.3	2,544	26.1	5,722	58.6	4
Total urban	956,721	35,855	3.7	155,765	16.3	764,528	79.9	573

Source: Nepal, Population Census 1981 (unpublished printout)

* Less than 0.1 percent.

term movers, commuters, and those involved in circulation. The 1981 census shows that nearly 53 percent of all urban migrants were in the Tarai towns and comprised 19.9 percent of the Tarai urban population. Migrants contributed the largest share to urban population in the Inner Tarai (27.1 percent) and the lowest in the Kathmandu Valley (10.2 percent) and Hill towns (12 percent). In terms of absolute numbers Kathmandu received the largest number of internal migrants among urban areas in the country. Foothill towns like Dharan (39 percent), Butwal (23.5 percent), and Hetauda (25.2 percent) and newly reclassified urban areas like Bharatpur (51.2 percent), Mahendranagar (29.4 percent), and Dhangadhi (33.5 percent) show a relatively high proportion of migrants.

Because of the problem of comparability between the 1971 and 1981 migration data it is difficult to ascertain whether the contribution of internal migration to urban growth increased during the 1971–81 decade. Interregional migrants comprised 13.4 percent of the total urban population in 1971 compared to 16.3 percent (all migrants to urban areas) in 1981. Moreover, the interregional nature of 1971 urban migration data and the reclassification of urban boundaries between 1971 and 1981 makes it difficult to ascertain the contribution of migration to urban growth in the two censuses. Possibly the 1981 figures inflate the total urban population and thereby show a lower proportion of urban migrants than might really be the case. In some instances (Nepalganj and Butwal, for example) the absolute number of urban migrants in 1981 appears much lower than the absolute number of interregional urban migrants in 1971—a phenomenon that defies logical explanation. Indications are that migration to urban areas in the Tarai as well as at the junction of the north–south and east–west roads has increased considerably in the 1970s. A recent survey in Butwal, for instance, shows that 74.2 percent of the sample households consisted of migrants (New Era 1985:33).

Some idea of the origin of urban migrants can be derived from the 1981 census. The largest proportion of internal migrants to urban areas of each geographical region came from the Hills (Table 19). Hill migrants comprised 78.1 percent of the migrants to the Inner Tarai urban areas. This proportion was 62.7 percent in the Tarai, 55.8 percent in the Kathmandu Valley, and 52.1 percent in Hill towns. The Tarai urban areas received the largest share of urban-oriented migrants from all regions. Nearly 53 percent of all urban migrants had the Tarai towns as their destination. Of the total urban migrants from each geographical region, the Tarai towns received 44.7 percent of Mountain migrants, 52.6 percent of Hill migrants, and 64.6 percent of the Tarai migrants. In comparison the Kathmandu Valley towns attracted only 36.6 percent of Mountain urban migrants, 21.1 percent of Hill urban migrants, and 17.6 percent of the Tarai urban migrants. The Hill urban areas (including the Kathmandu Valley) attracted only 26.4 percent of the total urban migrants originating from the region.

This finding evidences the stronger relative pull of the Tarai urban areas. Urban migration in this sense appears to be closely associated with the Mountain/Hill-to-Tarai migration stream. The fact that 20.5 percent of migrants to the Hill urban areas and 11.7 percent of migrants to the Kathmandu Valley urban areas originated from the Tarai also shows that inter-regional interaction has been enhanced through urban growth. The origin of urban migrants in each urban locality shows remarkable differences. Dhankuta, in the Eastern Hills, for example, received 54.7 percent of its migrants from the Tarai. Moreover, migrants from the Hills did not comprise the largest proportion of migrants to all the Tarai towns. Over two-thirds of the migrants to Janakpur and Lahan, for instance, originated from the Tarai itself.

On the basis of fragmentary information on the components of urban growth in Nepal, we can draw two guarded conclusions. First, internal as well as international migration and reclassification (addition of new towns) were the largest contributors to urban growth in the Tarai and Inner Tarai, at least till 1971. Census information leads us to believe that during this period the growth of Kathmandu Valley and Hill towns was contributed largely by natural increase. Second, in 1981 reclassification (addition of new towns as well as extension of the boundary of old towns) may have been the largest contributor to urban growth in general. Though there is no conclusive evidence apparent from the census figures, migration to all urban places (and international migration to the Tarai urban places in particular) has probably increased in recent years. Migration, therefore, must be contributing more to urban growth at the present than ever before.

The recent Demographic Sample Survey (1986) indicates that the predominant migration stream in Nepal is rural to rural. Some 80 percent of the male migrants and 87 percent of the female migrants migrate from rural to rural areas. The rural-to-urban migration stream comprises only 9 percent of the male migrants and 4 percent of the female migrants. The rural-to-urban migration stream involves a slightly higher proportion of male migrants from the Hills (about 16 percent) than from other regions including the Tarai (Nepal, CBS, 1987b).

CHARACTERISTICS OF URBAN POPULATION

How do Nepalese urban places, as presently defined and designated, differ from their rural counterparts? What are the demographic and socioeconomic characteristics that distinguish the process of urbanization in Nepal? The answers to these questions can be inferred by examining the differences in the demographic and socioeconomic characteristics of urban as well as rural areas.

Table 19. Regions of origin of internal migrants to urban areas: Nepal, 1981

Urban area	Total	Percentage distribution		
		Mountains	Hills	Tarai
Hills	10,041 (6.4)	27.4 (8.3)	52.1 (5.3)	20.5 (8.3)
Pokhara	5,600	29.9	61.8	8.3
Tansen	1,412	39.5	42.6	17.9
Dhankuta	1,986	18.0	27.3	54.7
Ilam	1,043	15.1	60.3	24.5
Kathmandu Valley	37,134 (23.8)	32.5 (36.6)	55.8 (21.1)	11.7 (17.6)
Bhaktapur	1,610	35.8	58.3	5.9
Kathmandu	29,127	32.4	55.3	12.4
Lalitpur	6,397	32.1	57.6	10.3
Inner Tarai	26,226 (16.8)	13.0 (10.4)	78.1 (20.9)	8.9 (9.4)
Birendranagar	2,048	27.7	63.8	8.5
Tribhuvannagar	1,299	2.7	94.1	3.2
Hetauda	8,753	19.0	64.3	16.7
Bharatpur	14,126	8.2	87.2	4.6

Tarai	82,364 (52.9)	17.9 (44.7)	62.7 (52.6)	19.4 (64.6)
Nepalganj	1,582	32.4	47.7	19.9
Mahendranagar	12,902	29.3	67.5	3.2
Dhangadhi	9,130	8.3	69.7	22.0
Butwal	5,310	30.0	62.8	7.2
Sidharthanagar	5,874	29.4	63.5	7.1
Birganj	5,544	15.2	54.9	30.0
Janakpur	5,528	2.0	30.6	67.4
Lahan	1,415	9.1	24.0	66.9
Rajbiraj	1,802	7.9	51.2	40.8
Biratnagar	14,282	14.9	60.7	24.3
Dharan	16,451	15.9	76.1	8.0
Bhadrapur	2,544	15.7	61.4	22.9
Total urban	155,765 (100.0)	21.2 (100.0)	63.0 (100.0)	15.9 (100.0)

Source: Nepal, Population Census 1981 (unpublished printout).

Note: Figures in parentheses are column percentages, others are row percentages. Percentages may not sum to 100 because of rounding.

Age and Sex Composition of Urban and Rural Population

The reliability of census information on age structure in countries like Nepal is well known and need not be elaborated here (ESCAP 1980:22–30). In the absence of a vital registration system, age misreporting is commonly associated with memory lapse or digital preference (Nepal, CBS, 1987a:49–56).

The age structure of population is determined by the levels of fertility, mortality, and migration. Relatively lower fertility and mortality levels and a higher rate of migration of working-age adults to urban areas tend to make the age composition of the urban population distinctly different from that of rural areas. In each Nepalese census since 1961 distinct differences are noted in the age composition of urban and rural population. Table 20 reveals that children below 15 years of age form a higher proportion of population in rural than in urban areas. As one might expect, the proportion of the population in the adult working-age group (15–34) is higher in urban than in rural areas. Higher levels of fertility in rural areas, as well as exodus of people in the young adult ages to urban areas in search of employment, education, and so forth, are some of the reasons for the urban/rural difference in age structure.

Table 20. Percentage of population in different age groups, urban and rural: Nepal, 1961–81

	1961		1971		1981	
Age	Urban	Rural	Urban	Rural	Urban	Rural
0–4	13.0	14.3	12.7	14.2	14.2	15.5
5–9	12.0	14.5	13.4	15.2	13.3	14.7
10–14	10.6	11.3	11.2	11.2	11.6	11.4
15–19	9.7	8.6	10.5	9.0	10.2	8.8
20–24	10.5	8.3	10.3	8.3	10.3	8.8
25–29	9.1	8.7	8.8	8.0	8.4	7.7
30–34	7.7	7.5	7.2	7.0	6.8	6.5
35–39	6.2	6.2	6.3	6.5	6.0	5.9
40–44	5.4	5.0	5.2	5.3	4.8	5.0
45–49	4.2	4.1	3.7	4.0	3.9	4.1
50–54	3.9	3.8	3.5	3.5	3.2	3.6
55–59	2.4	2.4	2.1	2.2	2.0	2.3
60–64	2.4	2.5	2.3	2.6	2.1	2.5
65+	2.8	2.7	2.9	3.1	3.1	3.3

Sources: Nepal, CBS (1967: vol. 3, table 2); Nepal, CBS (1975: vol. 1, table 6, and vol. 5, table 39); Nepal, CBS (1984: vol. 1, pt. 1, table 5, and vol. 3, table 5).

The essential difference in urban and rural age structure is reflected in the dependency ratio (Table 21). All three censuses show relatively lower dependency ratios for urban areas. This pattern is particularly marked with respect to younger-age and total dependency than older-age dependency. An influx of working-age population to urban areas explains this phenomenon. The fact that the ratio is rising in both urban as well as rural areas indicates the increasing proportion of younger-age population in both urban as well as rural areas.

A closer look at the dependency ratio in each urban locality reveals that in 1971 only one urban area had a ratio higher than the average rural ratio. In 1981 six urban areas displayed this character (Table 22). Note that four of the six are newly designated urban areas with considerable overbounding.

Sex selectivity in the structure of the urban population—a feature that has generally been noted in most developing countries—is quite evident in Nepal despite the problem of urban definition. In the last three censuses, sex ratios in all age groups are seen to be consistently higher in urban areas than in rural areas (Table 23). The sex ratio in urban areas, for example, was 112.9, 116.6, and 115.2 in 1961, 1971, and 1981 compared to 96.7, 100.8, and 104.4 in rural areas. Migration of adult males to urban areas is the most plausible explanation for the preponderance of active males in the urban population. In 1961, 1971, and 1981 males of ages 15–44 constituted 26.5, 27.3, and 24.8 percent of the total urban population while females comprised 22.5, 22.0, and 18.6 percent—that is, a slight increase in the proportion of males seems apparent in each period. In the rural areas, on the other hand, females in the 15–44 age group have consistently constituted a larger percentage of total population than males. Differentials in sex ratios are quite marked even among urban areas. High sex ratios are more characteristic

Table 21. Dependency ratio of urban and rural population: Nepal, 1961–81

	1961		1971		1981	
Age	Urban	Rural	Urban	Rural	Urban	Rural
Young[a]	60.0	73.6	64.7	75.5	70.1	78.7
Old[b]	8.8	9.6	8.9	10.5	9.2	10.9
Total[c]	68.8	83.1	73.6	85.9	79.3	89.6

Sources: Same as Table 20.

a. $\text{Young dependency ratio} = \frac{\text{Percentage of population of ages 0–14}}{\text{Percentage of population of ages 15–59}} \times 100.$

b. $\text{Old dependency ratio} = \frac{\text{Percentage of population of ages 60 and over}}{\text{Percentage of population of ages 15–59}} \times 100.$

c. Total dependency ratio = Young dependency ratio + old dependency ratio.

Table 22. Dependency ratio in urban localities: Nepal, 1971-81

Locality	1971	1981
Hills		
Pokhara	79.3	77.5
Tansen	74.0	74.8
Dhankuta	na	78.6
Ilam	84.4	75.9
Kathmandu Valley		
Bhaktapur	81.7	92.3
Kathmandu	68.1	69.2
Lalitpur	78.9	78.1
Inner Tarai		
Birendranagar	na	89.9
Tribhuvannagar	na	96.9
Hetauda	89.3	88.7
Bharatpur	na	85.9
Tarai		
Nepalganj	75.8	86.3
Mahendranagar	na	96.1
Dhangadhi	na	89.9
Butwal	70.8	89.6
Sidharthanagar	71.9	86.3
Birganj	66.2	85.2
Janakpur	79.2	78.2
Lahan	na	79.0
Rajbiraj	72.2	74.2
Biratnagar	68.1	77.0
Dharan	78.8	75.9
Bhadrapur	74.2	72.9

Sources: Same as Table 20.
na—not applicable.

of the Tarai towns than Hill towns in general (Table 24). The higher sex ratios for urban areas in general and Tarai urban areas in particular can be explained by the higher proportion of males among the migrants to urban areas.

As a consequence of the rising younger-age population in both urban and rural areas and the differentials in sex ratios, the median age of both urban and rural populations has declined over the years but the median age of urban males has remained higher than that of urban females (Table

Table 23. Age-specific urban and rural sex ratios: Nepal, 1961–81

Age	1961 Urban	1961 Rural	1971 Urban	1971 Rural	1981 Urban	1981 Rural
0–4	100.8	97.4	99.2	93.5	110.4	105.7
5–9	105.7	102.8	104.6	103.3	109.3	103.8
10–14	117.3	113.4	114.5	118.5	119.7	116.5
15–19	116.9	101.4	129.6	108.6	118.5	109.3
20–24	119.4	85.2	136.1	90.7	108.3	89.9
25–29	119.8	89.5	130.2	95.0	109.9	95.5
30–34	121.8	89.5	116.4	89.6	112.5	91.0
35–39	124.4	103.2	124.0	107.2	121.3	106.1
40–44	115.3	88.0	121.2	97.4	118.4	99.1
45–49	118.7	100.8	123.9	113.5	126.6	113.1
50–54	111.3	91.2	122.4	103.3	127.7	114.4
55–59	118.6	99.2	119.2	106.2	136.8	118.3
60–64	89.3	79.9	98.2	88.5	122.4	108.3
65+	89.1	86.1	95.4	94.9	123.0	112.0
All ages	112.9	96.7	116.6	100.8	115.2	104.4

Sources: Same as Table 20.

25). In rural areas, on the contrary, the median age of males is consistently lower than that of females.

Characteristics of Urban Migrants

On the basis of available data on lifetime migration we can broadly identify certain characteristics of urban migrants. In 1971 the sex ratio of interregional urban migrants was 159.5—higher than that for the urban population as a whole (116.6). All major urban areas had migrant sex ratios over 150, but Kathmandu and Bhaktapur had ratios approaching 280 and 240 respectively (Table 26). Nearly 70 percent of the interregional migrant population in 1971 was between the ages of 15 and 45. Urban migration in general was markedly age- and sex-selective.

The 1981 migration data pertain not only to interregional migrants but to all migrants to urban areas. The sex ratio of urban migrants was 120.9 in 1981—close to the ratio for the urban population as a whole (115.2). The 1981 census provides an age breakdown of urban migrants in three broad groups: below 15, 15–59, and over 60. Urban migrants in the 15–59 age group comprised 76.9 percent of the urban migrant population, a figure similar to the migrant population as a whole. By comparison a little over 59 percent of the total urban population was in this age group. Some age selec-

Table 24. Sex ratio and median age of urban population: Nepal, 1961–81

	Sex ratio			Median age	
Locality	1961	1971	1981	1971	1981
Pokhara	85.9	94.1	108.4	19.7	20.3
Tansen	108.3	111.6	112.2	20.0	20.8
Dhankuta	na	na	105.3	na	21.1
Ilam	na	105.8	110.2	19.1	20.2
Bhaktapur	104.3	108.1	104.4	21.4	19.5
Kathmandu	110.4	118.2	122.6	21.5	21.8
Lalitpur	105.6	105.9	119.4	21.7	21.5
Birendranagar	na	na	98.0	na	19.1
Tribhuvannagar	na	na	100.9	na	17.3
Hetauda	na	111.7	107.7	18.7	18.5
Bharatpur	na	na	109.2	na	18.7
Nepalganj	116.0	120.4	112.5	21.5	19.6
Mahendranagar	na	na	117.8	na	17.9
Dhangadhi	na	na	122.0	na	19.2
Butwal	na	117.2	110.0	20.9	18.3
Sidharthanagar	na	116.6	110.7	21.2	19.2
Birganj	139.5	133.9	111.4	21.7	19.8
Janakpur	107.2	120.6	118.4	21.2	20.7
Lahan	na	na	112.8	na	20.7
Rajbiraj	147.0	135.2	125.3	20.5	21.0
Biratnagar	143.9	136.4	119.3	21.2	20.4
Dharan	109.5	115.6	109.4	18.5	19.8
Bhadrapur	na	144.3	118.3	20.3	19.8
Nepal urban	112.9	116.6	115.2	21.1	20.3
Nepal rural	96.7	100.8	104.4	20.2	19.9

Sources: Same as Table 20.
na—not applicable.

tivity among urban migrants is still apparent, but sex selectivity appears to have declined. It could well be a reflection of the growing incidence of selective family migration to urban areas—a situation where, for various reasons, younger members of both sexes migrate. In some urban areas sex ratios seem to have reversed dramatically. Bhaktapur, for instance, had a sex ratio of 239.9 among interregional migrants in 1971; a decade later it was only 50.9 for all migrants to Bhaktapur. Bhaktapur is not an attractive destination for urban migrants, and most of the migration here appears to have been for marital reasons.

Table 25. Median age of urban and rural population: Nepal, 1961–81

Sex	1961		1971		1981	
	Urban	Rural	Urban	Rural	Urban	Rural
Male	22.53	19.80	21.53	19.74	20.49	19.38
Female	21.93	21.59	20.42	20.75	20.19	20.34

Sources: Same as Table 20.

The duration of stay and the reasons of stay in the present place of residence for urban migrants are provided for the first time in the 1981 census (Table 27). It reveals that urban-oriented migration is of long standing in the Tarai and Inner Tarai towns. More than 44 percent of lifetime migrants in the Tarai and Inner Tarai towns had been there for over 12 years compared to 34.3 and 23 percent in the Kathmandu Valley and Hill towns. The urban migration stream to the hill and valley towns seems to have picked up only recently. Over 52 percent of migrants to the Hill towns and 47.3 percent to the Kathmandu Valley towns had been there for less than five years. The Tarai towns, however, received the largest proportion of migrants in all duration intervals: 53.4 percent of those in the present place of residence for less than five years, 46.1 percent of those between 1 and five years, 54 percent of those between 6 and 11 years, and 57.7 percent of those in the present place of residence for over 12 years.

One would expect the older Kathmandu Valley towns to have a larger proportion of long-term migrants than the recently developed Tarai towns. The predominance of long-term migrants to Tarai towns can be explained on the basis of the urban-based but land-dependent migration to these towns in the 1950s and 1960s. Until recent times migration to Kathmandu (which was of a circulatory nature) was motivated by reasons of education and the search for public sector employment. Because of the de jure nature of the census and the exclusion of short-term movers the true magnitude of migration to Kathmandu is not captured by census data.

The reasons for staying in the present place of residence indicate that only 14.5 percent of urban migrants migrated for agricultural reasons. Moreover, migration for agricultural reasons in the Tarai (17.7 percent) and Inner Tarai (24 percent) towns was considerably higher than in the Hill towns (4.4 percent) and the Kathmandu Valley (3.5 percent) towns (Table 28). Trade and commerce was twice as important a reason for migration to the Hill and Kathmandu Valley towns than the Tarai and Inner Tarai towns. Migration to urban areas for reasons of service, study, and marital relations is similar in all regions. Service and marital reasons together accounted for a little over 30 percent of all migrants in the Hill, Kathmandu

Table 26. Sex ratio of migrants to urban areas: Nepal, 1971–81

	1981				
Urban area	Total	Under 15	15–59	60+	1971
Hills					
Pokhara	116.8	123.8	117.1	83.6	100.4
Tansen	75.6	119.2	63.1	79.1	163.8
Dhankuta	107.1	95.0	115.9	64.4	na
Ilam	127.2	100.0	136.4	100.0	136.0
Kathmandu Valley					
Bhaktapur	50.9	126.6	40.6	27.3	239.9
Kathmandu	164.3	152.7	170.1	125.1	279.3
Lalitpur	102.8	143.4	97.1	63.5	114.5
Inner Tarai					
Birendranagar	98.6	104.7	98.2	79.4	na
Tribhuvannagar	103.6	107.8	103.0	97.8	na
Hetauda	119.3	116.5	121.6	102.7	113.3
Bharatpur	113.3	115.5	112.7	115.0	na
Tarai					
Nepalganji	115.5	128.7	115.5	77.4	139.1
Mahendranagar	119.6	145.6	112.9	166.3	na
Dhangadhi	122.5	127.7	121.9	116.2	na
Butwal	112.0	104.1	114.2	106.4	107.8
Sidharthanagar	113.5	107.0	114.5	116.4	141.3
Birganj	104.3	108.3	104.9	82.4	163.7
Janakpur	105.5	109.5	107.0	80.2	155.7
Lahan	73.8	117.9	62.9	100.0	na
Rajbiraj	156.3	114.4	172.7	86.7	186.8
Biratnagar	131.5	119.8	136.1	109.4	158.5
Dharan	105.9	109.4	107.0	92.0	124.3
Bhadrapur	126.3	110.9	134.0	83.3	146.3
Total urban	120.9	124.2	121.8	104.6	159.5

Sources: Nepal, Population Census 1981 (unpublished printout); Nepal, CBS (1975: vol. 5, table 40).

Note: 1971 sex ratios are for interregional urban migrants.

Valley, and Tarai towns. Note that the "other" reasons category alone accounts for over a third of the migrants in almost all towns.

Despite the regional pattern noted above, the reasons for migration differ widely among towns within each region. In the Tarai, for example, Mahendranagar (58.9 percent), Dhangadhi (25 percent), and Bhadrapur (25

Table 27. Duration of stay of urban migrants in present place of residence: Nepal, 1981

Residence	Total number	Less than one year (%)	1–5 years (%)	6–11 years (%)	12 years and more (%)	Unspecified (%)
Hills	10,041	10.4	41.7	13.5	23.0	11.3
Pokhara	5,600	12.6	41.6	16.5	29.4	
Tansen	1,412	8.2	49.1	17.7	24.9	
Dhanruta	1,986	5.0	36.8	4.1	7.9	46.1
Ilam	1,043	12.5	42.1	9.9	14.5	21.0
Kathmandu Valley	37,134	2.9	44.4	17.7	34.3	0.7
Bhaktapur	1,610	2.5	41.6	10.7	28.4	16.7
Kathmandu	29,127	2.7	44.2	17.9	35.1	0.0
Lalitpur	6,397	3.7	45.9	18.5	31.9	
Inner Tarai	26,226	1.7	29.2	24.5	44.5	
Birendranagar	2,048	6.0	38.0	20.0	36.0	
Tribhuvannagar	1,299	4.8	27.4	36.2	31.6	
Hetauda	8,753	0.8	39.1	24.0	36.1	
Bharatpur	14,126	1.3	22.0	24.4	52.2	
Tarai	82,364	3.6	29.4	20.4	44.2	2.3
Nepalganj	1,538	5.9	50.0	16.5	27.6	
Mahendranagar	12,902	0.7	21.4	24.9	52.9	
Dhangadhi	9,130	3.9	36.2	18.4	41.4	
Butwal	5,310	3.8	18.8	20.6	56.7	
Sidharthanagar	5,874	3.9	21.0	20.6	54.4	
Birganj	5,544	4.0	34.2	15.7	46.1	
Janakpur	5,528	3.6	35.1	20.9	27.3	13.1
Lahan	1,415	4.2	32.3	11.3	25.7	26.5
Rajbiraj	1,802	8.8	48.4	17.5	25.2	
Biratnagar	14,282	2.0	30.9	20.3	46.8	
Dharan	16,451	6.0	29.4	21.2	41.4	2.0
Bhadrapur	2,544	1.8	28.8	18.9	30.5	20.0
Total	155,765	3.5	33.8	20.0	40.5	2.1

Source: Nepal, Population Census 1981 (unpublished printout).

Note: Percentages may not sum to 100 because of rounding.

percent) had relatively large proportions of migrants who stayed for agricultural reasons. Pokhara and Tansen in the Hills, Kathmandu and Lalitpur in the Kathmandu Valley, Hetauda in the Inner Tarai, and Nepalganj in the Tarai had relatively more migrants staying for trade and commerce reasons. Service was the major reason for migrants in the Hill town of Ilam and the

Table 28. Reasons of stay in present place of residence for urban migrants: Nepal, 1981

		Percentage distribution					
Residence	Total	Agri-culture	Trade and com-merce	Ser-vices	Study and training	Marital relation	Other
Hills	10,041	4.4	19.8	16.3	5.9	14.4	39.2
Pokhara	5,600	5.9	23.6	14.8	6.7	13.0	36.1
Tansen	1,412	2.2	33.3	7.3	6.4	18.8	32.1
Dhankuta	1,986	0.8	6.0	19.6	4.5	13.5	55.6
Ilam	1,043	6.1	7.5	30.7	3.9	17.7	34.0
Kathmandu Valley	37,134	3.5	21.5	19.5	7.7	13.8	34.1
Bhaktapur	1,610	2.4	30.1	6.2	1.2	38.4	21.7
Kathmandu	29,127	3.6	21.5	20.6	8.4	10.8	35.1
Lalitpur	6,397	3.1	19.8	17.8	6.0	21.1	32.2
Inner Tarai	26,226	24.0	10.9	12.3	5.9	10.7	36.2
Birendranagar	2,048	20.4	8.3	15.5	4.7	12.8	38.3
Tribhuvannagar	1,299	34.9	3.8	3.5	2.9	21.3	33.5
Hetauda	8,753	26.0	18.8	19.1	7.9	12.5	15.8
Bharatpur	14,126	22.3	7.0	8.5	5.1	8.4	48.7
Tarai	82,364	17.7	8.4	15.2	5.9	16.0	37.1
Nepalganj	1,582	5.7	22.6	12.6	11.6	18.5	29.0
Mahendranagar	12,902	58.9	7.7	4.0	3.2	9.7	16.5
Dhangadhi	9,130	25.0	9.0	8.9	2.4	11.4	43.2
Butwal	5,310	7.5	7.7	16.3	11.6	22.9	33.9
Sidharthanagar	5,874	7.8	8.4	16.7	11.2	22.4	33.6
Birganj	5,544	3.1	15.3	13.0	4.3	17.2	47.1
Janakpur	5,528	1.7	4.4	24.1	11.8	24.8	33.2
Lahan	1,415	3.1	11.0	10.8	3.5	28.0	43.7
Rajbiraj	1,802	2.3	5.9	34.5	2.8	19.9	34.6
Biratnagar	14,282	9.6	7.9	23.8	7.1	17.1	34.5
Dharan	16,451	8.6	5.2	15.1	3.6	13.7	53.9
Bhadrapur	2,544	25.0	9.0	16.5	7.9	11.8	29.0
Total urban	155,765	14.5	12.7	15.8	6.3	14.5	36.3

Source: Nepal, Population Census 1981 (unpublished printout).

Note: Percentages may not sum to 100 because of rounding.

Tarai towns of Janakpur, Rajbiraj, and Biratnagar. Marital relations were of overriding importance in Bhaktapur in the Kathmandu Valley. In towns like Dhankuta and Dharan "other" reasons accounted for over 50 percent of urban migration. In each case, with the sole exception of Mahendranagar, nonagricultural pursuits clearly emerge as the major reason for migration to urban areas.

Literacy of Urban and Rural Population

Nepal's population is largely illiterate, so one can expect dramatic differences in urban and rural literacy levels. The availability of greater educational opportunities in urban areas, the migration of educated rural people to urban areas, and the greater awareness of the urban population in general regarding education contribute to the higher literacy levels found in urban areas.

Literacy in Nepalese censuses has been defined as the general ability to read and write in any language. Because of this broad definition the census data on literacy have to be taken with a great deal of caution and according to some sources may even be exaggerated (Nepal, CBS, 1977:121–48; 1985b:52).

In 1952/54 a bare 5.3 percent of the population of age 10 and over were literate. While male literacy was 9.5 percent, female literacy was only 0.7 percent. Urban and rural literacy figures are available only for the last three censuses. These figures (Table 29) show that the differences in urban and rural literacy are indeed wide. In 1961, some 40 percent of the urban population was literate compared to 7.7 percent in the rural sector. In 1981, nearly 51 percent of the urban population and 22 percent of the rural population was found to be literate. The most significant increase in literacy has taken place with respect to the urban female population. Over 37 percent of urban females above the age of 10 were literate in 1981 compared to only 9.8 percent in rural areas. In 1981 eight of the 23 urban places had more than 40 percent literacy among females of age 6 and over. Eleven urban places had male literacy above 60 percent (Table 30). In 1971 only 4.8 percent of the adult urban population and 0.2 percent of the adult rural population had educational attainment beyond high school. This figure went up to 13.5 percent and 1.4 percent respectively in 1981. Literacy in general and female literacy in particular stand out as one of the most distinguishing characteristics of urbanization in Nepal.

Regional differences in the levels of literacy are, however, quite distinct. The Western Tarai and Inner Tarai urban places have lower levels of literacy both among males and females than urban places in other regions. Not surprisingly, the urban places that were reclassified in the 1981 census have much lower literacy levels than the urban average. Bhaktapur in the Kathmandu Valley is the only exception.

Table 29. Urban and rural literacy: Nepal, 1961–81
(Population 10 years of age and over)

	1961			1971			1981		
Location	Total	Male	Female	Total	Male	Female	Total	Male	Female
Urban	40.0	57.5	19.6	47.0	62.4	28.0	50.6	62.0	37.2
Rural	7.7	14.6	1.1	12.9	22.9	2.7	21.6	32.9	9.8
Total	8.9	16.4	1.8	14.3	24.7	3.7	23.5	34.9	11.5

Sources: Nepal, CBS (1967: vol. 3, pt. 4, table 4); Nepal, CBS (1975: vol. 2, pt. 2, table 17, and vol. 5, table 43); Nepal, CBS (1984: vol. 1, pt. 4, table 15, and vol. 3, table 12).

A comparison of literacy in urban and rural areas in districts with urban places in 1981 shows a similar picture. Both female and male literacy is much lower in all newly reclassified urban places (Table 31).

Activity Rates and Occupational Structure

The most distinguishing characteristic of urbanization is the difference in the occupational structure between urban and rural areas. The nature and extent of this difference is regarded as an element of such fundamental importance that it is often used as a major criterion in the definition of urban areas.

Comparative census data on urban occupational structure have been available for each urban locality only since 1971. The labor force and occupational structure data derived from the censuses suffer from conceptual as well as measurement problems (Nepal, CBS, 1985b:93). For example, the 1961 census defined persons above the age of 15 as the "active" part of the labor force. The 1971 and 1981 censuses include persons above the age of 10 in this category. Further, the censuses define the "economically active" population as those who had worked for at least eight months (at single stretch or in intervals) during the last year preceding the day of census enumeration either for pay, profit, or remuneration whether in cash or in kind. Persons above the age of 10 who remained active for a period of less than eight months in the course of the year preceding the census were thus defined as "economically inactive." A number of biases are therefore inherent in the census data on labor force. The long reference period, while introducing the element of recall lapse, may also have contributed to an exaggerated picture of labor force participation. In a peasant society like Nepal very few people can afford to remain unemployed for a long period of time (Nepal, CBS, 1987a:202). The data on employment structure also ignore the seasonality of employment so pervasive in an agrarian society like Nepal. Moreover, the employment data from the censuses provide no idea of the productivity or efficiency of labor and ignore the entire

Table 30. Percentage literate (6 years of age and over) in urban localities: Nepal, 1971–81

Locality	1971			1981		
	Total	Male	Female	Total	Male	Female
Central Hills	49.7	71.1	28.3	49.8	62.4	36.0
Pokhara	43.0	65.3	21.6	49.5	63.5	34.2
Tansen	70.9	88.1	51.4	51.1	58.5	42.8
Eastern Hills	42.2	58.4	24.6	50.3	64.6	34.6
Dhankuta	na	na	na	45.3	59.9	29.7
Ilam	42.2	58.4	24.6	57.1	71.1	41.5
Kathmandu Valley	47.8	63.2	30.0	54.7	63.1	44.7
Bhaktapur	27.2	42.0	11.0	33.1	46.4	19.1
Kathmandu	56.6	71.6	38.4	61.7	69.1	52.6
Lalitpur	38.4	54.0	22.0	46.8	54.3	37.8
Western Inner Tarai				27.0	40.1	14.1
Birendranagar	na	na	na	29.0	43.2	15.8
Tribhuvannagar	na	na	na	25.8	38.2	13.0
Central Inner Tarai	36.7	54.1	16.8	53.0	65.6	39.1
Hetauda	36.7	54.1	16.8	52.2	65.8	37.5
Bharatpur	na	na	na	54.0	65.4	41.1
Western Tarai	37.2	50.4	20.7	35.0	47.2	20.6
Nepalganj	37.2	50.4	20.7	43.0	54.2	30.6
Mahendranagar	na	na	na	33.3	47.9	16.3
Dhangadhi	na	na	na	27.4	37.8	14.4
Central Tarai	45.0	60.9	25.9	56.6	68.2	43.4
Butwal	41.4	54.3	26.0	60.1	71.3	47.6
Sidharthanagar	47.7	65.8	25.8	53.9	66.0	40.4
Eastern Tarai	48.9	59.3	34.5	51.8	62.9	38.6
Birganj	58.9	70.2	43.0	45.4	57.2	32.2
Janakpur	37.8	51.9	19.6	52.6	66.5	35.7
Lahan	na	na	na	30.4	42.1	17.3
Rajbiraj	64.6	77.5	46.3	56.9	71.1	38.6
Biratnagar	44.7	53.4	31.8	50.5	59.4	39.6
Dharan	54.1	65.6	40.7	64.1	76.3	50.6
Bhadrapur	45.7	54.5	31.9	55.9	65.8	43.8
Nepal urban	47.0	61.5	29.6	50.5	61.1	38.2
Nepal rural	12.5	21.8	2.9	21.4	32.0	10.3

Sources: Nepal, CBS (1975: vol. 5, table 42, and vol. 2, pt. 2, table 16); Nepal, CBS (1984: vol. 3, table 11, and vol. 1, pt. 4, table 14).

na—not applicable.

Table 31. Literacy rate of population (6 years of age and over) in urban and rural areas in districts with urban places: Nepal, 1981

	Urban			Rural		
District	Total	Male	Female	Total	Male	Female
Kaski	49.5	63.5	34.2	31.1	44.5	17.6
Palpa	51.1	58.5	42.8	27.2	39.4	14.7
Dhankuta	45.3	59.9	29.7	29.5	45.9	12.4
Ilam	57.1	71.1	41.5	31.6	44.6	17.7
Bhaktapur	33.1	46.4	19.1	32.0	46.0	17.3
Kathmandu	61.7	69.1	52.6	34.3	47.2	20.0
Lalitpur	46.8	54.3	37.8	29.4	43.1	14.7
Surkhet	29.0	43.2	15.8	20.8	33.4	9.1
Dang	25.8	38.2	13.0	21.1	31.6	9.9
Makwanpur	52.2	65.8	37.5	19.3	28.9	9.7
Chitwan	54.0	65.4	41.1	31.2	43.8	17.8
Banke	43.0	54.2	30.6	13.2	20.4	5.5
Kanchanpur	33.3	47.9	16.3	20.4	28.2	10.5
Kailali	27.4	37.8	14.4	14.7	22.7	5.7
Rupandehi	56.5	68.2	43.4	22.7	35.2	9.1
Parsa	45.4	57.2	32.2	16.8	24.5	8.8
Dhanusha	52.6	66.5	35.7	15.5	24.9	4.9
Siraha	30.4	42.1	17.3	17.1	26.2	7.2
Saptari	56.9	71.1	38.6	23.7	36.8	9.8
Morang	50.5	59.4	39.6	26.2	36.0	15.5
Sunsari	64.1	76.3	50.6	25.9	38.0	12.7
Jhapa	55.9	65.8	43.8	36.6	47.1	24.7
Nepal	50.5	61.1	38.2	21.4	32.0	10.3

Sources: Same as Table 30.

issue of disguised unemployment and underemployment. One of the most serious problems in census data involves the classification of women in the labor force, particularly with respect to the exclusion of housewives from the economically active category. As a result the urban occupational structure derived from the censuses raises a number of issues regarding the nature and extent of Nepalese urbanization. The issues become more involved when the definition of urban boundaries is taken into account. These problems of census data have to be borne in mind in dealing with the occupational characteristics of Nepalese urbanization.

Growth of the Economically Active Population

Comparable figures showing an increase in the economically active population by urban and rural sectors are shown in Table 32. The average annual growth rate of the economically active population between 1971 and 1981 indicates a rapid increase in the urban labor force (10.2 percent) relative to the rural labor force (3.2 percent). Further, the economically active female population appears to have grown at over twice the rate of the male population in both urban and rural areas. This discrepancy may stem largely from the difference in classification of the female population in the economically active category employed in the 1971 and 1981 censuses. The crude and refined activity rates for the male and female population in the two censuses reveal, for example, that there has been a substantial increase in the activity rates for urban females during the two censuses (Table 33).

Urban activity rates, however, are lower than rural activity rates for both sexes and for both periods, though the former appears to be growing faster than the latter. Lower urban activity rates have resulted from a higher proportion of students in the working-age population of urban areas. A comparison of activity rates, particularly for females in different urban places, shows that there is considerable regional variation. Female activity rates in general are lower in the Eastern Tarai and Central Tarai urban areas and higher in the Kathmandu Valley and Hill urban areas. Cultural practices with respect to participation of females in activities outside the household as well as definitional problems (classification of females in the "housewife" or "economically active" category) appear to have contributed to this apparent regional disparity in female activity rates. In most urban areas in Nepal there has been a marked increase in the working-age female

Table 32. Growth of economically active population (10 years of age and over) in urban and rural areas: Nepal, 1971–81

	1971		1981		Annual average growth rate (%) (1971–81)	
Sex	Urban	Rural	Urban	Rural	Urban	Rural
Male	125,702	3,308,586	280,144	4,199,800	8.3	2.4
Female	18,898	1,399,338	100,396	2,270,546	18.2	5.0
Total	144,600	4,707,924	380,540	6,470,346	10.2	3.2

Sources: Nepal, CBS (1975: vol. 5, tables 44 and 39, and vol. 3, pt. 1, table 19); Nepal, CBS (1984: vol. 3, table 5 and 18, and vol. 1, pt. 5, table 21).

Table 33. Crude and refined activity rates of economically active population (10 years of age and over) in urban localities: Nepal, 1971–81

Locality	Crude activity rates						Refined activity rates					
	1971			1981			1971			1981		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Central Hills												
Pokhara	41.3	48.9	34.1	50.5	56.7	43.8	56.0	65.9	46.5	69.2	77.5	60.1
Tansen	24.7	38.0	9.8	49.2	56.9	40.7	32.8	50.3	13.1	67.9	78.8	55.8
Dhankuta				42.9	56.6	28.4				58.6	76.4	39.4
Ilam	36.3	49.6	22.3	39.9	54.6	23.7	50.1	67.0	31.4	53.8	72.6	32.5
Kathmandu Valley												
Bhaktapur	36.2	55.5	15.3	40.1	50.5	29.1	50.6	76.9	21.7	55.6	70.1	40.5
Kathmandu	28.3	46.0	7.4	12.8	57.1	28.4	37.4	59.6	10.0	58.2	74.8	37.6
Lalitpur	29.9	49.9	8.7	31.5	57.9	30.5	41.0	68.2	12.0	61.1	77.9	41.0
Western Inner Tarai												
Birendranagar				41.4	51.9	31.2				61.6	80.1	44.8
Tribhuvannagar				32.8	55.5	10.0				48.4	81.0	14.9
Central Inner Tarai												
Hetauda	31.6	52.8	7.9	41.9	52.6	8.3	46.7	75.8	12.1	60.7	75.3	44.5
Bharatpur				28.3	44.5	10.6				39.5	61.4	15.0
Western Tarai												
Nepalganj	32.5	56.3	3.7	39.0	57.8	17.8	40.8	69.[illegible]	5.1	55.9	82.4	25.8
Mahendranagar				38.1	53.7	19.8				57.7	81.5	29.9
Dhangadhi				32.3	58.7	20.1				60.8	84.9	30.2

Central Tarai												
Butwal	30.3	53.1	3.6	29.8	47.2	10.6	40.8	69.6	5.1	42.7	66.7	15.5
Sidharthanagar	31.4	54.5	4.6	32.2	50.1	12.5	42.7	72.0	6.4	45.4	69.5	17.9
Eastern Tarai												
Birganj	30.3	50.2	3.6	39.5	57.4	19.7	39.9	64.0	4.9	57.7	82.4	29.2
Janakpur	32.2	56.9	2.4	32.5	53.3	7.7	45.2	76.6	3.5	45.0	72.4	11.0
Lahan				32.3	53.5	8.4				45.6	76.2	11.7
Rajbiraj	30.2	50.7	2.5	33.8	53.0	9.8	41.1	66.8	3.6	46.6	71.3	13.9
Biratnagar	35.1	57.8	4.0	35.2	53.4	13.3	47.2	74.2	5.8	48.6	72.3	18.9
Dharan	25.7	41.0	6.4	30.2	49.3	9.4	34.6	53.8	8.8	40.6	65.6	12.8
Bhadrapur	40.1	61.3	9.5	40.3	58.0	19.5	54.9	79.6	14.1	54.9	76.5	27.6
Nepal urban	31.3	50.6	8.9	39.8	54.7	22.6	42.3	66.9	12.3	54.9	74.8	31.5
Nepal rural	42.4	59.4	25.3	46.0	58.5	33.0	60.1	83.7	36.0	65.9	83.8	47.2

Sources: Same as Table 32.

Note: The crude activity rate represents the number of economically active persons of age 10 and above as a percentage of the total population. The refined activity rate represents the number of economically active persons of age 10 years and above as a percentage of the total population of age 10 and above.

enrollment in schools. Participation of females in activities outside the household has also risen in major urban centers like Kathmandu.

The reasons for economic inactivity of the active-age population provided in the 1981 census are similar for both urban and rural areas. Female inactivity is overwhelmingly related to homemaking while male inactivity is related to study (Table 34). Because of the longer reference period and the seasonal aspect of agricultural employment the percentage of the active population seeking jobs appears extremely underestimated for both urban and rural areas. In 1981 those seeking jobs constituted only 2.2 percent of the total active-age male urban population and 0.7 percent of the total active-age female urban population. A National Planning Commission study made in 1977, however, shows that 45.8 percent of the total labor days remain unutilized in urban areas in Nepal. The figure for rural areas was 63.0 percent (Nepal, NPC, 1983:72).

Employment Status of the Economically Active Population

The differences in the employment status of the economically active population between urban and rural areas is noteworthy only with respect to the proportion of employees and self-employed persons in the labor force (Table 35). Between 1971 and 1981 the proportion of employees in the urban labor force seems to have declined phenomenally (from 52.4 to 26.0 percent) followed by an increase in the proportion of self-employed (from 43.9 to 68.6 percent). In Nepal, where most urban areas are administrative and commercial centers, one would expect a substantial percentage of the

Table 34. Reasons for economically inactive population (10 years of age and over) in urban and rural areas: Nepal, 1981

	Reasons for remaining inactive (%)			
Area	Homemaker	Student	Seeking job	Others and Unstated
Urban				
Total	50.4	37.0	3.4	9.2
Male	0.3	75.3	8.9	15.4
Female	72.0	20.5	1.1	6.5
Rural				
Total	62.9	20.8	3.0	13.4
Male	0.8	63.9	9.5	25.8
Female	82.8	6.9	0.9	9.4

Source: Nepal, CBS (1984: vol. 1, pt. 5, table 22, and vol. 3, table 19).

Note: Figures may not sum to 100 because of rounding.

economically active population to be employees both in the public and in the private sector. This does not seem to be the case in 1981. The increase in the proportion of self-employed is obviously an indicator of the growth of the informal sector in the urban economy.

A regional pattern in the employment status is perceptible. The Eastern Tarai towns in general show a higher proportion of the economically active population in the employee category than the Kathmandu Valley and Hill urban places.

Occupational Structure of the Employed Labor Force

Data on the occupational structure of the urban and rural population have been available since 1961. In the 1961 and 1971 censuses the highest percentage of the active labor force in urban areas was in tertiary activities (over 40 percent) while over 95 percent of the rural labor force was in primary activities (Table 36). The predominance of tertiary activity in the urban occupational structure was the most notable feature of urban areas in both the 1961 and 1971 censuses. The 1981 census indicates that while tertiary activities account for nearly one-fifth of the economically active labor force in urban areas, the percentage of the population in nonprimary activities has declined phenomenally. In 1981 only 29.3 percent of the economically active urban labor force (and 35.7 percent of the male labor force) was in nonprimary activities. Clearly, the occupational structure of urban areas seen in the 1981 census does not make sense.

A large-scale ruralization of urban areas as shown by the 1981 census could, in theory, be possible given enormous overbounding or a phenomenal exodus of rural migrants to urban areas where they are urban-based but land-dependent. Such an unlikely situation does not obtain in Nepal. The scale of rural–urban migration is too small. Further, the 1981 census information on urban-oriented migration reveals that 85.5 percent of the migrants migrated for reasons other than agriculture. The problem therefore lies with the definition of "main occupation" used in the census.[13] Overbounding of urban areas could have contributed to the distortion in the urban occupational structure, but it is highly unlikely that it could have so dramatically affected the occupational structure of places like Kathmandu, Lalitpur, and Biratnagar (Table 37).

A more realistic picture of the urban occupational structure is provided by the 1986 Demographic Sample Survey. The occupational structure of the male population in the sample urban households shows that only 34.3

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[13] Main occupation was defined in the census in terms of time spent in a particular activity. Since some landownership and supervision of activity is a common feature of many urban households in Nepal, agriculture and farm-related activites could have been erroneously noted as the main occupation in the 1981 census.

Table 35. Employment status of economically active population (10 years of age and over) in urban localities: Nepal, 1971–81

	Percentage distribution							
	Employer		Employee		Self-employed		Unpaid family worker	
Locality	1971	1981	1971	1981	1971	1981	1971	1981
Central Hills	0.5	0.2	21.9	13.5	75.9	84.5	1.8	0.3
Pokhara	0.4	0.1	18.2	13.7	80.4	84.1	1.1	0.3
Tansen	1.4	0.5	41.4	12.9	51.8	85.6	5.4	0.1
Eastern Hills	1.5	0.5	24.6	31.8	71.6	62.4	2.3	3.5
Dhankuta	na	0.1	na	29.0	na	63.0	na	5.6
Ilam	1.5	1.1	24.6	36.0	71.6	61.5	2.3	0.3
Kathmandu Valley	0.8	0.6	57.1	22.9	26.9	71.9	4.1	1.2
Bhaktapur	0.6	0.5	29.9	13.0	62.2	76.2	7.3	7.2
Kathmandu	0.9	0.7	68.6	25.5	28.0	69.6	2.4	0.3
Lalitpur	0.8	0.4	52.3	21.0	41.4	76.2	5.4	0.2
Western Inner Tarai	na	1.3	na	17.6	na	78.3	na	1.0
Birendranagar	na	1.5	na	18.1	na	77.5	na	2.0
Tribhuvannagar	na	1.1	na	17.1	na	79.0	na	0.1
Central Inner Tarai	*	1.3	34.2	27.7	65.4	64.3	0.6	2.3
Hetauda	*	0.5	34.2	25.7	65.4	69.3	0.4	0.8
Bharatpur	na	2.8	na	31.6	na	55.1	na	5.1

Western Tarai	1.1	0.5	41.0	16.8	53.5	80.6	4.4	0.7
Nepalganj	1.1	0.5	41.0	27.2	53.5	70.1	4.4	0.7
Mahendranagar	na	0.2	na	8.0	na	90.4	na	0.4
Dhangadhi	na	0.8	na	17.6	na	78.6	na	1.1
Central Tarai	0.4	0.1	44.2	30.3	54.5	60.5	0.8	0.2
Butwal	*	0.1	43.0	34.7	56.4	56.3	0.6	0.3
Sidharthanagar	0.7	0.2	45.2	27.3	53.1	63.3	1.0	0.2
Eastern Tarai	1.1	1.1	60.2	39.5	37.7	53.5	1.7	1.3
Birganj	*	0.4	58.4	27.1	41.2	69.9	0.3	0.3
Janakpur	1.1	1.8	44.6	44.4	52.7	44.3	1.6	2.3
Lahan	na	0.5	na	25.5	na	71.9	na	0.3
Rajbiraj	1.4	1.4	59.9	49.6	38.3	43.8	0.4	1.9
Biratnagar	0.9	0.9	70.0	40.0	27.9	51.8	1.2	0.7
Dharan	2.6	2.1	43.1	50.7	53.7	41.2	0.6	3.8
Bhadrapur	0.5	0.8	64.9	40.3	32.8	53.9	1.8	0.8
Urban total	0.8	0.7	52.4	26.0	43.9	68.6	2.8	1.2
Rural total	0.4	0.7	8.0	8.1	87.2	86.5	4.3	2.6

Sources: Nepal, CBS (1975: vol. 3, pt. 2, table 27, and vol. 5, table 44); Nepal, CBS (1984: vol. 1, pt. 5, table 25, and vol. 3, table 22).

Note: The 1981 figures do not sum to 100 because the "unstated" category has not been shown.

na—data not available.

*less than 0.1 percent.

Table 36. Occupational structure of population, urban and rural: Nepal, 1961–81

	Percentage of classified economically active population in activities					
	Primary		Secondary		Tertiary	
Year	Urban	Rural	Urban	Rural	Urban	Rural
1961[a]						
Total	38.0	96.1	20.1	1.8	41.9	2.1
Male	30.9	94.7	21.7	2.1	47.4	3.1
Female	61.4	98.1	15.0	1.2	23.6	0.7
1971						
Total	32.8	96.3	26.6	1.4	40.6	2.3
Male	29.5	95.2	29.0	1.8	41.5	3.0
Female	54.7	98.8	10.7	0.5	34.6	0.7
1981						
Total	70.7	94.7	9.5	2.9	19.8	2.4
Male	64.3	93.2	11.4	3.5	24.3	3.2
Female	87.1	97.4	4.7	1.6	8.2	0.9

Sources: Nepal, CBS (1967: vol. 4, table 6); Nepal, CBS (1975: vol. 3, pt. 2, table 28, and vol. 5, table 39); Nepal, CBS (1984: vol. 3, table 20, and vol. 1, pt. 5, table 23).

Note: Primary activity includes farming and related activities; secondary activity includes production and related activities; tertiary activity includes service, sales, clerical, professional/technical, administrative, and related activities.

a. In 1961 the economically active population was defined as the population 15 years of age and over. The figures for 1971 and 1987 pertain to population 10 years of age and over.

percent of the economically active males above the age of 10 were engaged in primary activities in urban areas. The secondary and tertiary sectors involved 15.6 and 46.9 percent of the urban labor force. The corresponding figure for rural areas is 73.9, 16.3, and 7.6 percent respectively in the primary, secondary, and tertiary sectors (Table 38). The fact that the proportion of the urban and rural labor force engaged in secondary (production and related) activities is similar in both urban and rural areas, however, poses a problem of analyzing the results of the Demographic Sample Survey also. While tertiarization of the urban occupational structure is clearly discernible in Nepalese urban areas, the growth in the secondary sector has clearly not kept pace with increasing urbanization.

A detailed profile of occupational structure by urban locality, available from censuses since 1952/54, shows a secular decline in the urban labor force (total as well as male) engaged in primary activities well up to 1971 (Table 37) in the Kathmandu Valley and Tarai towns. Only four of the 16 designated urban places in 1971 (Pokhara and Ilam in the Hills, Bhaktapur in the Kathmandu Valley, and Hetauda in the Inner Tarai) had more than 50 percent of the labor force in primary activities. Six urban places including Kathmandu, Biratnagar, and Birganj among major centers had over 75 percent of the total as well as the male labor force in nonprimary activities. Tertiary occupations involved more than 40 percent of the labor force in nine 1971 urban places. Nearly 50 percent of Biratnagar's active labor force was in secondary activities, and the proportion of urban population in these occupations appeared to be rising in the Kathmandu Valley and Eastern Tarai towns between 1961 and 1971. Although overbounding of some urban areas might have affected the urban occupational structure, the trends in the 1961 and 1971 censuses have in all likelihood continued in Nepalese urban areas.

Urban and Rural Incomes

The findings of the survey of employment, income distribution, and consumption patterns in Nepal conducted by the National Planning Commission in a sample of 4,040 households in 37 districts (including 10 *nagar panchayats* and 128 village *panchayats*) is the major source of information on urban and rural incomes (Nepal, NPC, 1983). The results of the survey show that the average family and per capita incomes in urban areas were more than twice that in rural areas (Table 39). Moreover, the share of the nonagricultural income in the average family income of urban households was over twice that in rural households. One would assume that this differential in income and associated differentials in wage rates between urban and rural areas would be one of the major motivating factors in rural–urban migration (Todaro 1976).

Differences are also observed in the distribution of income among urban and rural households. Nearly one-third of the rural families had average annual incomes of less than NR. 2,500 compared to 13.5 percent among urban families. Urban/rural differences in income distribution are lower in the NR. 2,500 to 10,000 income bracket but widen in the NR. 10,000 to 25,000 income bracket. Urban areas have twice as many families in the NR. 10,000 plus income bracket than rural areas.

The survey shows that the incidence of poverty is more widespread in the rural areas than in the urban areas. Among rural households 35.5 percent were reported to be below the national minimum subsistence level of consumption expenditure (NR. 2 per day). This proportion was 23.5 percent in the case of urban households (Nepal, NPC, 1983:114).

Furthermore, substantial regional differences have been noted among urban areas. Urban per capita incomes, according to one source, are highest in the Eastern Tarai towns of Bhadrapur, Biratnagar, and Rajbiraj followed by Janakpur, Birganj, Hetauda, and the capital city of Kathmandu. Hill

Table 37. Occupational structure of classified economically active male population in urban areas: Nepal, 1952/54–1981

	Percentage in primary				Percentage in secondary				Percentage in tertiary			
Locality	1952/54	1961	1971	1981	1952/54	1961	1971	1981	1952/54	1961	1971	1981
Central Hills		30.0	44.5	80.3		19.9	14.9	5.1		50.2	40.6	14.6
Pokhara			52.5	80.6			10.7	5.7			36.8	13.7
Tansen			14.0	79.1			30.8	3.0			55.2	17.9
Eastern Hills		56.6	64.3	67.2		5.0	11.1	9.2		38.4	24.6	23.6
Dhankuta				77.3				8.8				13.9
Ilam			64.3	55.6			11.1	9.6			24.6	34.8
Kathmandu Valley	33.4		26.6	65.3	8.7		29.9	8.5	57.9	49.2	43.5	26.2
Bhaktapur	67.4		60.9	74.6	6.9		19.5	9.4	31.8		19.6	15.9
Kathmandu	20.2		14.0	62.3	7.5		33.7	7.6	72.3		53.3	30.1
Lalitpur	41.5		34.1	68.7	14.0		28.4	10.6	45.1		37.5	20.7
Eastern Tarai				89.6				3.3				7.2
Birendranagar				82.6				4.5				12.9
Tribhuvannagar				93.8				2.5				3.7
Central Inner Tarai			54.6	57.0			19.4	13.8			22.9	29.1
Hetauda			54.6	58.7			19.4	13.2			22.9	28.1
Bharatpur				54.6				14.7				30.7
Western Tarai		15.6	29.7	80.1		23.4	28.3	6.1		60.9	42.0	13.8
Nepalganj			29.7	56.9			28.3	12.6			42.0	30.5
Mahendranagar				91.5				2.0				6.5
Dhangadhi				90.1				4.9				5.0

Central Tarai		39.5	46.1		25.2	16.2		35.3	37.8
Butwal		31.0	39.5		25.1	19.6		43.9	40.9
Sidharthanagar		45.7	50.2		25.3	14.0		29.0	35.8
Eastern Tarai	30.6	24.0	51.7	28.3	33.5	20.3	41.0	42.5	28.0
Birganj		14.2	69.8		17.1	11.5		68.7	18.7
Janakpur		36.5	34.2		14.8	21.2		48.7	44.6
Lahan			70.9			16.9			12.2
Rajbiraj		18.0	36.5		20.3	22.8		61.6	40.7
Biratnagar		20.6	53.5		48.4	23.0		30.9	23.5
[illegible]		35.0	42.1		22.9	24.2		42.1	33.7
Bhadrapur		21.7	56.9		33.4	20.6		44.9	22.5
Nepal urban	30.9	29.5	64.3	21.7	29.0	11.4	47.4	41.5	24.3

Sources: Nepal, Department of Statistics (1957: table 12b); Nepal, CBS (1967: vol. 4, table 6); Nepal, CBS (1975: vol. 5, table 44); Nepal, CBS (1984: vol. 3, table 20).

Note: 1952/54 figures for economically active population includes economically active in all ages; the 1961 census includes population over 15 years of age and the 1971 and 1981 censuses include population above 10 years of age. Also the occupational structure of valley towns for 1952/54 is based on industry classification while that for 1961, 1971, and 1981 is based on occupational classification.

Table 38. Occupational structure of the male population in urban and rural areas: Nepal, 1986

Occupation	Percentage of economically active males above 6 years of age engaged in activities: Urban	Rural
Agriculture and related	34.33	73.95
Production and related	15.64	16.33
Professional	3.18	1.37
Administration	0.34	
Clerical	1.28	0.06
Sales	18.57	2.17
Services	0.23	0.06
Services not classified	23.32	3.89
Not stated	3.10	2.15

Source: Nepal, CBS, Demographic Sample Survey, 1986 (unpublished printout).
Note: Totals may not sum to 100 because of rounding.

towns, in general, have lower per capita incomes than their Tarai and Inner Tarai counterparts (PADCO 1984:28). Urban income levels are not highest in Kathmandu. The National Planning Commission study also indicates that the Tarai urban dwellers are economically better off than those in the hills.

Of the 10 *nagar panchayats* covered by the NPC survey, only 26.7 percent of urban household heads were found employed in farming and related occupations, that is, in primary occupations. In comparison, 76 percent of rural household heads had farming and related activities as their main occupation. Over 45 percent of urban household heads reported being engaged in tertiary occupations (Nepal, NPC, 1983: table 4.3). These findings, it may be noted, are quite in contrast to what is reported in the 1981 census.

To sum up, Nepalese urban areas are characterized by a preponderance of adult active males in the total population and have relatively low dependency ratios. High general literacy, particularly female literacy, and higher levels of educational attainment seem to be a distinguishing feature of urban areas in general. Urban areas also have lower activity rates compared to the rural areas, due mainly to a higher proportion of students in the working-age population. Nonagricultural reasons appear to be prominent in the migration to urban areas, more so in the Kathmandu Valley and Hill urban areas than in the Tarai and Inner Tarai. The migratory pull of the Tarai urban areas is, however, stronger than that of the Hill urban areas. The differentials in income levels and in the distribution of income between urban and rural areas also appear to be quite substantial.

Table 39. Urban and rural incomes: 1977

A. Urban and rural income differentials (income in NR)

Measure	Urban	Rural	Rural as percentage of urban
Average family income	12,771	5,569	43.6
Median family income	6,053	3,556	58.7
Per capita income	2,094	950	45.4
Percentage share of nonagricultural income in average family income	77.0	35.6	45.5

Source: Nepal, NPC (1983:83–85).

B. Urban income distribution

Annual average income (in NR)	No. of families	%	Cumulative percentage
Below 2,500	126	13.5	13.5
2,500–5,000	265	28.4	41.9
5,000–10,000	292	31.3	73.2
10,000–25,000	186	20.0	93.2
Over 25,000	63	6.8	100.0
Total	932	100.0	

C. Rural income distribution

Annual average income (in NR)	No. of families	%	Cumulative percentage
Below 2,500	1,207	32.9	32.9
2,500–5,000	1,221	33.3	66.2
5,000–10,000	742	20.3	86.5
10,000–25,000	295	8.1	94.6
Over 25,000	199	5.4	100.0
Total	3,664	100.0	

Source: Nepal, NPC (1983: tables 9.2 and 9.3).

Note: US $1 = NR 21.00.

Although the 1981 census information on urban occupational structure is misleading and erroneous, the 1961 and 1971 census information and the recently conducted Demographic Sample Survey reveal that there has been an increasing proportion of tertiary activities in the urban occupational structure. Although recent information on the occupational structure of each urban area is not available, it seems likely that there is a wide regional difference in the occupational structure among urban areas.

FUNCTIONAL BASIS OF URBAN PLACES IN NEPAL

The most pertinent indicator of the functional basis of urban settlements is the occupational and industrial classification of economically active labor force in urban areas. The census is the only source of such information in Nepal. The comparison of the 1971 and 1981 data on occupational and industrial classification of labor force in urban areas, however, reveals serious problems with the 1981 data. Compared to similar data derived from the 1971 census, the 1981 census shows an overwhelming proportion of urban labor force engaged in agriculture and related activities and an absolute decline in employment in manufacturing as well as transport and communication (Table 40). These features lead us to question the validity of the 1981 data because they neither conform with the Nepalese urban experience nor with the developmental achievements of the last decade, particularly with respect to infrastructure and services. There is no evidence

Table 40. Urban employment of classified economically active population by major industry groups: Nepal, 1971–81

	1971		1981	
Industry	No.	%	No.	%
Agriculture, forestry, fishing	47,483	32.8	243,420	66.0
Mining and quarrying	21	*	96	*
Manufacturing	15,475	10.7	13,638	3.7
Electricity, gas, water	686	0.5	1,108	0.3
Construction	1,902	1.3	765	0.2
Commerce	22,116	15.3	37,083	10.1
Transport and communication	4,573	3.2	3,942	1.1
Finance and business services	2,051	1.4	5,405	1.5
Personal and community services	50,293	34.8	63,179	17.1
Total	144,600	100.0	368,636	100.0

Source: Nepal, CBS (1975: vol. 5, table 45); Nepal, CBS (1984: vol. 3, table 21).

Note: Percentages may not sum to 100 because of rounding.

*less than 0.1 percent.

whatsoever that Nepalese urban areas, in spite of overbounding, display a more rural character today than they did a decade ago.

Almost all of the major manufacturing establishments and all of the six industrial estates are located in urban areas. All urban places of 1981 are electrified, and many of the major urban centers are linked with the road network characterized by an increasing volume of passenger as well as cargo traffic. In many cases urban areas have been the major beneficiary of of foreign-aided development.

In view of the problems of data, I present here only a preliminary exploration of the functional basis of urban places. One way of undertaking this exploration is to exclude urban employment in primary activities altogether—since the census overrepresents the employment in this sector considerably. Despite the problems inherent in this approach we can gain at least some idea of the nonprimary functional basis of urban places in Nepal. The analysis will be limited to employment of the economically active male population. Nonprimary employment consists of seven industry groups: manufacturing; electricity, gas, and water; construction; commerce; transport and communication; finance and business services; and personal and community services. The first three activities have been grouped into one for consistency. The objective is to examine the relative importance of these industry groups in different urban areas.

The percentage distribution of the economically active male labor force in the five functional groups in each urban area is presented in Tables 41 and 42. By comparing this distribution with the mean and the standard deviation of respective functional groups we get an idea of the relative importance and specialization of towns in terms of functions (Nelson 1955). A percentage value of each function above the mean plus one standard deviation is taken as indicating the relative importance of that function in that town. Similarly, a value above the mean plus two standard deviations is indicative of relative specialization. The functional rating achieved through this method is neither exclusive nor exhaustive.

In 1971 only four of the 16 urban places evidenced any degree of specialization: Biratnagar in manufacturing, Hetauda in transport and communication, Rajbiraj in business and finance, and Ilam in personal and community services. Eight towns—Bhadrapur and Lalitpur in manufacturing, Pokhara, Butwal, and Birganj in commerce, Dharan in transport and communication, and Kathmandu and Sidharthanagar in personal and community services—evidence the importance of at least one function. The remaining four towns do not show the relative importance of any function. With the exception of Hetauda and Dharan, which are both transitional foothill towns and show the relative significance of transport and communication, no other regional pattern is notable. In 1971 Pokhara, Ilam, Bhaktapur, and Hetauda had over 50 percent of the active male labor force engaged in primary activities.

Table 41. Percentage distribution of classified economically active male population in industry groups in urban areas: Nepal, 1971

	Percentage in agriculture and related	Manu-facturing	Commerce	Transport and com-munication	Business and finance	Personal and community services
Hills						
Pokhara	52.9	13.3	42.7[a]	2.4	1.0	40.6
Tansen	14.4	17.6	34.9	2.2	1.7	43.6
Dhankuta						
Ilam	64.5	7.7	14.5	2.9	2.4	72.5[b]
Kathmandu Valley						
Bhaktapur	60.9	24.3	25.5	3.2	1.2	45.8
Kathmandu	13.1	9.4	17.8	5.1	2.8	64.9[a]
Lalitpur	34.0	27.1[a]	17.3	3.1	2.7	49.8
Inner Tarai						
Birendranagar						
Tribhuvannagar						
Hetauda	55.2	18.2	24.8	14.6[b]	1.2	41.2
Bharatpur						

Tarai						
Nepalganj	29.9	16.5	36.5	3.3	1.8	41.9
Mahendranagar						
Dhangadhi						
Butwal	31.1	18.0	45.1[a]	6.0	1.4	29.5
Sidharthanagar	45.8	11.8	17.8	3.3	1.3	65.8[a]
Birganj	14.3	13.7	39.3[a]	6.4	2.7	37.9
Janakpur	36.9	18.3	32.6	5.3	2.2	41.6
Lahan						
Rajbiraj	18.6	12.2	26.0	2.8	4.8[b]	54.2
Biratnagar	20.6	43.4[b]	15.7	5.2	1.4	34.3
Dharan	35.1	12.4	30.8	10.0[a]	0.9	45.9
Bhadrapur	21.7	27.1[a]	30.1	7.2	2.5	33.1
Mean ($\bar{x}$)		18.2	28.2	5.2	2.0	46.4
Standard deviation (σ)		8.9	9.9	3.3	1.0	12.3
$\bar{x} + 1\sigma$		27.1	38.1	8.5	3.0	58.7
$\bar{x} + 2\sigma$		36.0	48.0	11.8	4.0	71.0

Note: For explanation see text.

a. Important function.

b. Specialized function.

Table 42. Percentage distribution of classified economically active male population in industry groups in urban areas: Nepal, 1981

Urban area	Percentage in agriculture and related	Manufacturing	Commerce	Transport and communication	Business and finance	Personal and community services
Hills						
Pokhara	75.5	7.0	33.0	1.5	3.2	55.3
Tansen	76.1	6.2	40.6[a]	1.1	3.0	49.1
Dhankuta	64.2	13.9	29.1	1.6	2.3	53.1
Ilam	55.0	4.8	19.4	0.6	3.3	71.9[a]
Kathmandu Valley						
Bhaktapur	73.4	13.5	41.2[a]	2.7	2.8	39.8
Kathmandu	58.1	6.0	29.8	3.2	5.8[a]	55.2
Lalitpur	66.8	9.3	26.2	2.1	4.7	57.7
Inner Tarai						
Birendranagar	81.9	8.9	14.5	0.8	3.7	72.1[a]
Tribhuvannagar	90.8	5.8	16.3	0.2	1.3	76.4[a]
Hetauda	55.9	22.4[a]	26.0	6.0[a]	6.2[a]	39.4
Bharatpur	52.5	10.8	26.8	3.4	4.0	55.0

Tarai						
Nepalganj	52.0	3.2	47.6[b]	1.4	2.7	45.1
Mahendranagar	88.5	3.5	30.8	0.7	1.6	63.4
Dhangadhi	78.9	5.8	19.6	0.6	3.2	70.8[a]
Butwal	37.2	9.3	42.3[a]	5.5[a]	4.3	38.6
Sidharthanagar	50.8	8.3	42.0[a]	5.3[a]	3.9	40.5
Birganj	60.6	12.8	26.8	6.5[a]	7.1[b]	46.8
Janakpur	32.1	13.0	30.9	2.2	3.7	50.2
Lahan	66.9	1.9	30.7	0.2	2.0	65.2
Rajbiraj	32.9	10.8	26.1	1.5	2.2	59.4
Biratnagar	41.3	35.0[b]	21.9	3.5	3.6	36.0
Dharan	39.9	9.3	34.8	9.1[b]	2.9	43.9
Bhadrapur	48.3	10.1	25.7	1.0	3.2	60.0
Mean ($\bar{x}$)		10.1	29.7	2.6	3.5	54.1
Standard deviation (σ)		7.0	8.7	2.4	1.4	12.0
$\bar{x} + 1\sigma$		17.1	38.4	5.0	4.9	66.1
$\bar{x} + 2\sigma$		24.1	47.1	7.4	6.3	78.1

Note: For explanation see text.

a. Important function.

b. Specialized function.

A similar exercise reveals that four towns can be rated functionally specialized in 1981: Biratnagar in manufacturing, Nepalganj in commerce, Dharan in transport and communication, and Birganj in business and finance. Nepalganj is the only town in this group that showed no function of importance in 1971. Of the functionally specialized towns, Birganj alone shows the importance of yet another function, namely, transport. Altogether three towns, Butwal, Sidharthanagar, and Hetauda, have more than one important function—the first two in commerce and transport, and the latter in manufacturing, transport, and business and financial services. Seven towns have at least one function of importance: Tansen and Bhaktapur in commerce, Kathmandu in business and finance, and Ilam, Birendranagar, Tribhuvannagar, and Dhangadhi in personal and community services. Nine towns, including Pokhara, show no function of relative importance.

Four features of the functional basis of towns in 1981 are notable. First, towns with direct road links to Kathmandu such as Birganj and Hetauda have acquired importance in business and finance as well as transport and communication in the 1970s. Second, the commercial importance of Central Tarai towns (Butwal and Sidharthanagar) has been enhanced by road infrastructure laid in the late 1960s and early 1970s. Third, the importance of transport and communication in transitional foothill towns (Dharan, Hetauda, and Butwal) is very much in evidence. And fourth, newly reclassified towns like Birendranagar, Tribhuvannagar, and Dhangadhi display the importance of personal and community services. Biratnagar and Ilam are the only towns that evidence a similar functional base in the 1971 as well as the 1981 census.

The functional classification of Nepalese towns has been arranged on the basis of the patterns displayed in Table 41 and 42. This essentially taxonomic approach suffers from several limitations, both conceptual and methodological (Smith 1965:539–48; Alford 1972:331–58).

Only three main functions have been recognized: manufacturing (which includes construction as well as electricity, gas, and water), trade (which includes commerce as well as transport and communication), and services (including business and financial services as well as personal and community services). A town with over 50 percent of the nonprimary labor force in any of these functions is exclusively classified as a town in that functional class. Towns with less than 50 percent of the labor force in any of the three functions have then been regrouped under a combination of manufacturing and service or trade and service functions. Towns with over 75 percent of the labor force in any of the two combinations have been classified as manufacturing/service or trade/service towns. Towns that have at least 25 percent of the nonprimary labor force in each of the three functions have been classified as diversified towns indicating the diversity of functions such towns display. The classification of Nepalese towns under this framework for 1971 and 1981 appears in Table 43.

In 1971 only one town (Butwal) qualified as a trade town; five towns (Kathmandu, Lalitpur, Ilam, Sidharthanagar, and Rajbiraj) appear as service towns. Biratnagar was the only manufacturing/service town. Four of the nine Tarai towns (Nepalganj, Birganj, Janakpur, and Dharan), two Hill towns (Pokhara and Tansen), one Inner Tarai town (Hetauda), and Bhaktapur in the Kathmandu Valley appear as trade/service towns. Bhadrapur in the Eastern Tarai was the only functionally diversified town. In 1971 there were more trade/service towns than service towns per se.

In 1981 altogether 16 of the 23 towns appear as service towns. All seven reclassified towns are service towns. Biratnagar is the only manufacturing/service town and seems to have maintained the character it displayed in 1971. Nine of the 16 urban places of 1971 appear in the same functional class in 1981. All of the trade/service towns, with the exception of Bhaktapur, are in the Tarai. The predominance of the service function in most towns is partly explained by the fact that 21 of the 23 urban centers are also administrative centers of different orders. Despite the methodological problems inherent in such a taxonomic classification it brings into sharper focus the role of the expansion of bureaucracy in the urbanization process in Nepal.

EVOLUTION OF THE SYSTEM OF URBAN PLACES IN NEPAL

One of the major approaches in the study of urbanization is anchored to the concept of the system of urban places. Central-place theory has provided an intuitively powerful appeal to the notion that all urban places in a national setting are part of a single system or hierarchy of places according to some regular pattern (Christaller 1966; King 1984). In viewing urban-spatial population distribution it has been argued that cities make up a system and arrange themselves in a hierarchy according to the function performed by each for the system as a whole and that, moreover, each such place exerts an influence over the smaller urban and nonurban places contiguous to it (Berry 1971). Emergence of a genuine system of urban places has been seen as a hallmark of "mature urbanization" (Pred 1977). A typology of urban spatial organization has also been suggested to illustrate the four stages of development of an urban system from independent, local centers with no hierarchy in stage one to a functionally interdependent system of cities (mature urbanization) in stage four (Gilbert and Gugler 1982).

An urban system understood as a set of interdependent cities in a region or a nation (Bourne and Simmons 1978:3) is a reflection of the nature of the distribution of settlements and their functional and resource characteristics. Very little is known, however, about the nature and characteristics of the Nepalese settlement system. Thus here I shall attempt only to

Table 43. Functional classification of Nepalese towns: 1971–81

	1971						1981					
Town	Manufacturing	Trade	Service	Manufacturing and service	Trade and service	Diversified	Manufacturing	Trade	Service	Manufacturing and service	Trade and service	Diversified
Hills												
Pokhara [D, Z, R]					X				X			
Tansen [D]					X				X			
Dhankuta [D, R]									X			
Ilam [D, Z]			O						O			
Kathmandu Valley												
Bhaktapur [D]					O						O	
Kathmandu [D, Z, R, C]			O						O			
Lalitpur [D]			O						O			
Inner Tarai												
Birendranagar [D, R]									X			
Tribhuvannagar [D]									X			
Hetauda [Z]					O						O	
Bharatpur [D]									X			

Tarai												
Nepalganj [D, Z]					O						O	
Mahendranagar [D]									X			
Dhangadhi [D]									X			
Butwal [Z]		X									X	
Sidharthanagar [D]			X								X	
Birganj [D]					X				X			
Janakpur [D]					X				X			
Lahan									X			
Rajbiraj [D, Z]			O						O			
Biratnagar [D]				O						O		
Dharan [Z]					O						O	
Bhadrapur						X			X			
Total	0	1	5	1	8	1	0	0	16	1	6	0

Note: Letters in brackets indicate administrative status of towns: D = district headquarters; Z = zonal headquarters; R = regional development center; C = national capital. O = Towns in the same functional group in 1971 and 1981. In spite of lower official status most Tarai towns serve as de facto zonal headquarters.

distinguish certain features of the Nepalese urban system on the basis of two sets of information: (1) the place of the urban center in the network of roads connecting urban areas and (2) the commercial/trade significance of areas designated urban. A specific theoretical construct—namely, the gateway model—will be used to elucidate the evolution of the Nepalese urban system. The discussion is limited to designated urban places.

The spatial characteristics of Nepalese urban places since the 1950s lead us to four conclusions: There is no regularity in the hierarchic distribution of urban places by size class; urban places are not evenly distributed in space, though over the years a tendency toward dispersal is seen particularly in the Tarai; there is no relationship between size and spacing of towns; and no apparent relationship is perceptible between the size and function of towns. The expansion of the road network northward from the strategically situated border towns appears to be the major factor in the evolution of the system of urban places in Nepal. Moreover, the Nepalese urban system appears to be fragmented to a considerable extent, largely as a consequence of the lack of permanent road access in much of the Hills and Western Tarai.

In the 1970s the expansion of the road network has enhanced the connectivity (the presence of a road link between any two towns), and therefore the centrality, of the towns of the Kathmandu Valley, the Central Inner Tarai, and the Central Hill town of Pokhara. The Eastern and Central Tarai towns also have relatively better physical articulation. The construction of the Prithvi and Sidhartha highways (the former linking Pokhara with Kathmandu and the latter linking Pokhara with the Central Tarai) and the east-west highway, planned as a major transport spine in the Tarai region (part of which is still under construction in the western sector), has enhanced the connectivity of towns in the central and eastern sectors of the country. It is only in the western sector that connectivity is still extremely low and in some cases nonexistent. Situated near Indian railheads as they are, all border towns have road access to towns across the border.

While the roads running south to north (especially the Raxaul-Kathmandu and Sunauli-Pokhara roads) are major interregional links, the east-west roads are not of much interregional significance. The present road network has been funded largely through foreign assistance (Table 44).

Commercial/Trade Significance of Urban Places

Despite the increases in accessibility not all towns with road links are important in terms of national and international trade. In the absence of adequate data the commercial/trade significance of urban places in Nepal can be inferred from available data on the generation of sales tax, total tax, and sales tax collected by customs offices located in designated urban centers.[14] These data are available for 1980–81 (Nepal, Ministry of Finance, 1984:11, 15).

The percentage share of sales tax collected by tax offices in urban localities can be regarded as a measure of the commercial vitality of the urban center in the national/regional context. The overall importance of the urban center can be inferred from its percentage share in the total tax collected by tax offices in urban centers. The significance of an urban center in international trade can be similarly deduced from the percentage share of the center in the sales tax collected by customs offices.

In 1980–81, 19 of the 25 tax offices and nine of the 25 customs offices in the country were in designated urban localities. These urban-based tax offices collected 94.3 percent of the sales tax and 96.7 percent of total tax (inclusive of sales tax) in the country. Furthermore, 97.3 percent of the sales tax collected by customs offices in the country was realized from urban-based offices (Table 45).

The commercial/trade significance of border towns in the Tarai can be gauged from the fact that 74.5 percent of the sales tax, 45.8 percent of total tax, and 92 percent of the sales tax from customs realized from urban-based tax offices in 1980–81 was generated in these towns.

Birganj, the border town with the nearest approach to Kathmandu, plays the most significant role in international trade. It alone contributes 71.2 percent to the sales tax collected from urban-based customs offices. Biratnagar (10.5 percent), Kathmandu (8.0 percent), Sidharthanagar (5.3 percent), and Nepalganj (2.3 percent) are other urban centers of consequence in international trade. The four Tarai urban centers can be regarded as the primary gateways of international trade for the eastern (Biratnagar), central (Birganj and Sidharthanagar), and western (Nepalganj) sectors of the country. The preeminent place of Birganj stems largely from its access to Kathmandu, where the bulk of national imports are destined.

The commercial/trade significance of towns as reflected in the share in sales tax generation indicates that Janakpur, Biratnagar, and Kathmandu have considerable trade turnovers. Birganj, Hetauda, Bhadrapur, and Sidharthanagar are other urban centers of importance. The high figures for Janakpur reflect the taxes generated from the state-owned cigarette factory—one of the major profit-making monopolies in the public sector in Nepal. But Janakpur's commercial linkage with other Tarai or Hill towns is comparatively slight and it plays no role in international trade. Emerging

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[14] These figures do not represent the tax base of urban areas themselves. These taxes are realized by the center and not by the *nagar panchayats* in which the tax or customs offices are located.

Table 44. Major highway projects and their relation to urban areas: 1983

Highway/road section	Length (km)	Places connected
Funded by India		
Tribhuvan Rajpath	191	Birganj–Hetauda–Kathmandu
Sidhartha Rajmarg	200	Sidharthanagar–Butwal–Tansen–Pokhara
Mahendra Rajmarg (east–west highway, eastern section)	256	Biratnagar–Lahan and places en route
Mahendra Rajmarg (central section)	303	Butwal with Central Tarai
Mahendra Rajmarg (western section)	280	Butwal with Nepalganj (development phase)
Kathmandu–Trisuli	70	Kathmandu with Central Hills
Funded by PRC		
Arniko Rajmarg	114	Kathmandu with Tibet
Prithvi Rajmarg	176	Kathmandu–Pokhara
Kathmandu Ring Road	27	
Narayanghat–Gorkha	59	Links Bharatpur to Kathmandu/Pokhara
Kathmandu–Bhaktapur	13	
Funded by USA		
Dhangadhi–Dandeldhura	143	Dhangadhi with Far Western Hills
Nepalganj–Surkhet	77	Nepalganj–Birendranagar
Funded by UK		
Jogbani–Dharan	67	Biratnagar–Dharan
Mahendra Rajmarg (Narayanghat–Butwal section)	113	Bharatpur–Butwal
Dharan–Dhankuta	65	Dharan–Dhankuta

Funded by USSR		
Mahendra Rajmarg (Dhalkebar-Pathlaiya section)	110	A branch road links this road to Janakpur
Funded by Switzerland		
Lamosangu-Jiri	110	Links Kathmandu through Arniko Rajmarg to Eastern Hills
Funded by Asian Development Bank		
Rapti valley road	83	Hetauda-Narayanghat

Source: Nepal, Dept. of Roads (1983).

Table 45. Percentage share of urban-based offices in collection of sales tax, total tax, and sales tax from customs: Nepal, 1980–81

Locality	Sales tax	Total tax	Sales tax from customs
Hills			
Pokhara	0.88	1.72	na
Tansen	0.03	0.32	na
Dhankuta	*	0.14	na
Ilam	0.05	0.16	na
Kathmandu Valley			
Bhaktapur	na	na	na
Kathmandu	18.36	40.68	7.96
Lalitpur	na	na	na
Inner Tarai			
Birendranagar	na	na	na
Tribhuvannagar	0.36	0.60	na
Hetauda	5.76	9.98	na
Bharatpur	0.03	0.55	na
Tarai			
Nepalganj	1.28	2.04	2.31
Mahendranagar	4.04	1.67	0.48
Dhangadhi	2.24	1.36	0.78
Butwal	na	na	na
Sidharthanagar	5.48	3.85	5.29
Birganj	7.32	6.75	71.16
Janakpur	25.08	12.18	na
Lahan	1.03	0.81	na
Rajbiraj	1.01	1.20	0.10
Biratnagar	18.34	10.46	10.48
Dharan	2.97	2.23	na
Bhadrapur	5.73	3.29	1.45
Total	100.00	100.00	100.00

Source: Nepal, Ministry of Finance (1984: tables 12 and 18).

Note: Figures may not sum to 100 because of rounding.

* Less than 0.01 percent.

na—not applicable.

industrial activity and its location between Kathmandu and other Tarai urban centers has enhanced the commercial/trade significance of Hetauda.

Kathmandu's dominant position as the primate city is reflected in its percentage share in total tax collection. Nearly 41 percent of the total tax from urban-based tax offices is collected from Kathmandu alone. Much of it is due to the increasing volume of commercial activity and a fast-growing tourist industry. Janakpur, Biratnagar, Birganj, and Hetauda are other urban centers of importance in the generation of total tax revenue. As is evident from Table 45 the contribution of tax offices in Hill urban centers in generating sales tax as well as total tax is negligible.

The Gateway Hypothesis of Urban Development

The preceding discussion enables us to identify the most functionally articulate urban centers in Nepal, particularly in the Tarai. Almost all the Tarai urban centers have proximity to Indian railheads, but only those strategically located with respect to the Tarai and Hill hinterland evidence substantive commercial, trade, and functional significance. Given the historical basis of growth, accessibility, and functional characteristics of the Tarai urban centers, the gateway hypothesis of urban development (Burghardt 1971; Hirth 1978) provides an explanation of the evolution of the system of urban places in Nepal. The assumptions and postulates of the gateway model seem to fit rather well in the Nepalese context of the development of market settlements.

The gateway hypothesis explains the growth of market centers, towns, and cities as the consequence of the growth of settlements in strategic locations as "gateways" or entrances to a large hinterland. Locational, functional, and hinterland characteristics differentiate a gateway settlement from the traditional central place.

Gateway towns tend to develop in the contact zones between areas of differing intensities or types of production along or near economic shear lines. Such locations are points of interface among zones of different technologies or levels of sociopolitical complexity and are marked by changes in cost factors and economic discontinuities in the movement of goods. Gateway towns are therefore in sites of considerable transport significance—at the break-of-bulk points or at the nodes of transport lines (Burghardt 1971:269-70).

Functionally, gateway settlements initially develop in response to trade or the settling of sparsely populated frontier areas. These settlements derive advantage from such natural irregularities as the differential distribution of natural resources and population, variable agricultural productivity, and barriers to trade and commerce (Hirth 1978:37-38). Long-distance trade is of considerable significance to such settlements. The structure of employment in gateway towns is therefore more heavily committed to transportation and wholesaling.

The hinterland of gateway settlements is characterized by an elongated fan-shaped service area extending outward from the core (Burghardt 1971:270). In this sense a gateway settlement does not possess a compact service area like that of a traditional central place. But if the tributary area of a gateway is large and productive enough to support the eventual rise of large central places, the gateway will itself come to function as a redistributive central place.

Lines of transport linking the primary gateway with the hinterland are of enormous significance in the development of a hierarchy of gateways. Secondary and tertiary gateways may then develop at points where the mode of transport changes or natural irregularities in the distribution of population and production potential are manifest. A hierarchy of gateways is characterized by a dendritic market network (Johnson 1970) with all markets ultimately oriented to the primary gateway (Hirth 1978:38). Changes in the modes and means of transport, in the alignment of new transport lines, or in the distribution and characteristics of population and production of the hinterland can bring about substantive changes in the location, the characteristics, and the hierarchy of gateway settlements.

Burghardt (1971) and Hirth (1978) have elucidated the gateway model of settlement and town development in cases as diverse as the growth of towns in the Canadian prairies and prehistoric Mexican highlands. Messerschmidt (1980) highlights the utility of the gateway model in understanding the process of growth and change in Nepalese market settlements in central-western Nepal. Several studies have reported the impact of new road development on the structure of market settlements in Nepal (Schroeder and Sisler 1970; Goil 1971; Sharma 1976; Blaikie et al. 1976).

The Nepalese Case

The gateway model of the growth of towns in Nepal is instructive inasmuch as it explains the evolution of the system of urban places along the Indian border, in the foothills, and along lines of transport in the hills.

Major Tarai urban areas can be seen as primary gateways commanding a large Tarai and Hill hinterland. On the basis of the commercial significance of border towns, five primary gateways can be identified: Biratnagar, Janakpur, Birganj, Sidharthanagar, and Nepalganj. All of these urban centers are break-of-bulk points strategically located in relation to the Indian railheads and trade routes leading to the hills. Though all these towns grew initially as gateway settlements, the administrative and service functions they have acquired—and the relatively large population and production base that has evolved in the last few decades—have also made them central places of varying order not only to surrounding rural areas in the Tarai but also to contiguous lower-order settlements across the border in India (Map 7). Major cities in the states of Bihar, Uttar Pradesh, and West Bengal in India act as higher-order central places to the primary gateway towns of Nepal. This role is facilitated by the existence of an open international border between Nepal and India.

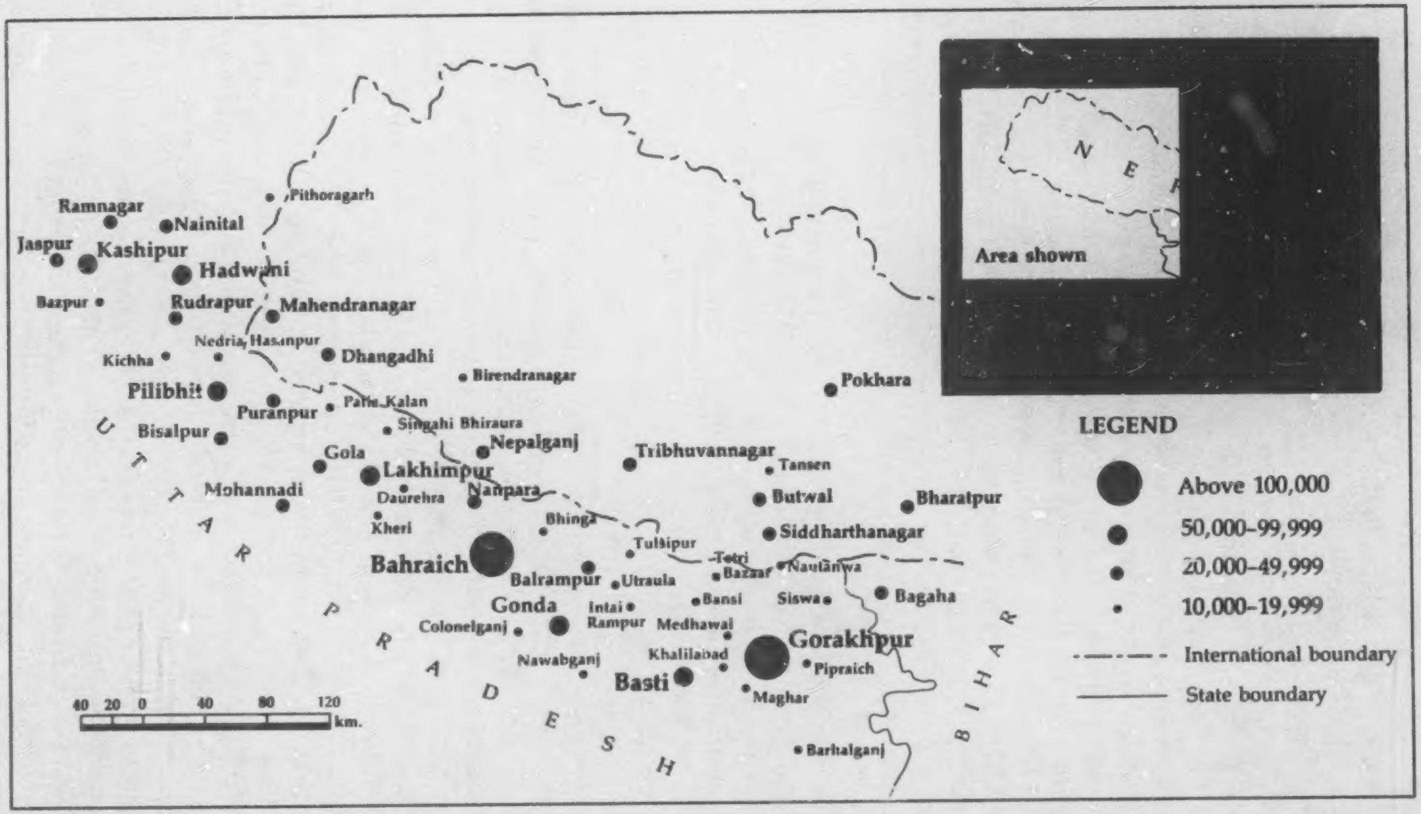
The border towns of the Tarai are the conduits of Nepal's growing international trade with India and other countries. Nepal's landlocked situation and the rising trend of Nepalese trade with India has made these primary gateways the spatial expressions of Nepal's growing economic dependency on India. The linkage of these towns with towns across the border as well as secondary and tertiary gateway towns within Nepal has therefore remained strong. The lack of communication and transaction data for the border towns restricts a quantitative analysis of these functional links.

A hierarchy of gateway towns has evolved along transportation lines leading from the primary gateways to the hinterland. This hierarchy is clearly seen in the Eastern and Central Tarai. The primary gateways act as the major outlet in the dendritic market network characteristic of much of Nepal.

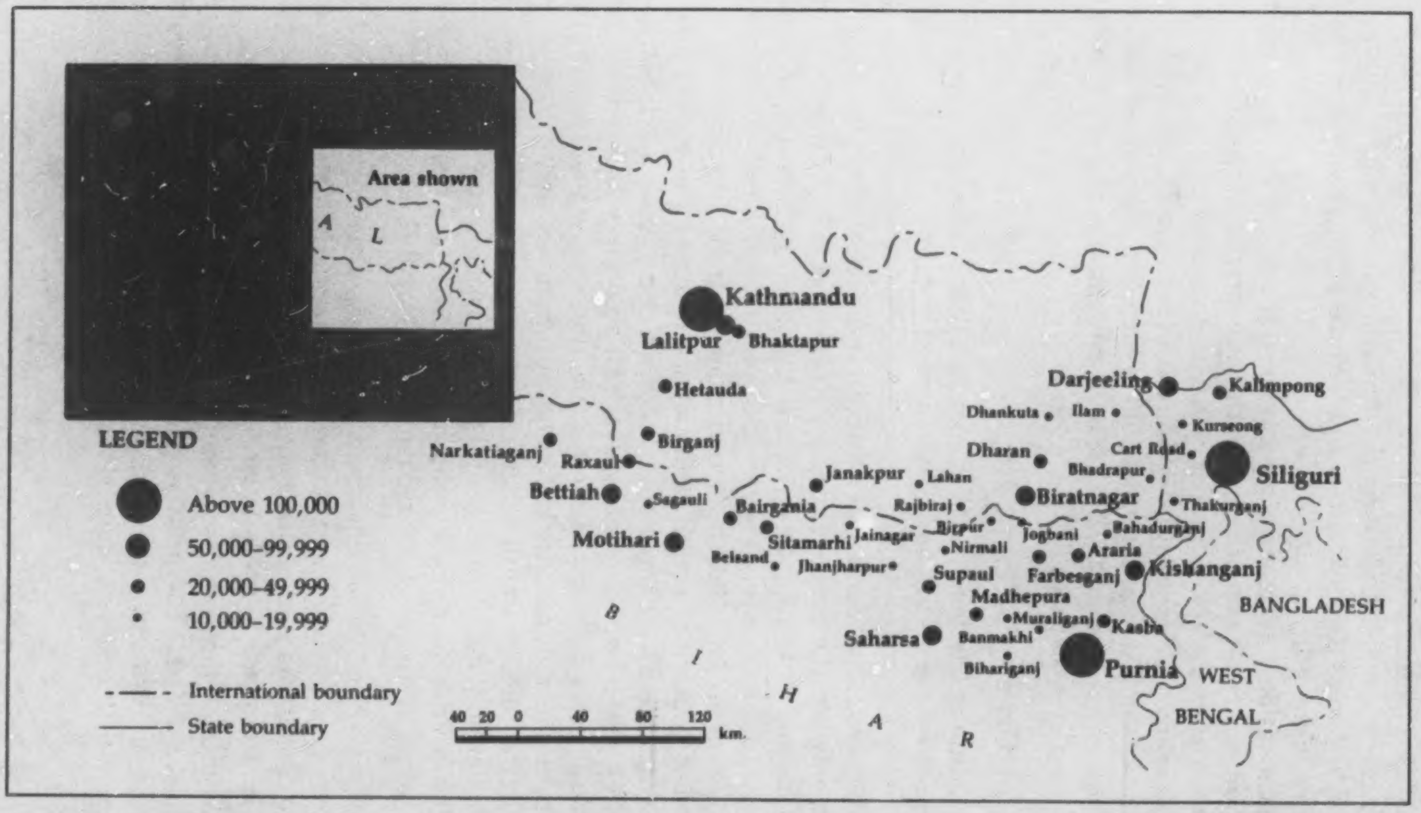
The development of roads linking the border towns with the foothills has speeded the growth of what could be termed secondary gateways. Dharan in the Eastern Tarai, Hetauda in the Central Inner Tarai, and Butwal in the Central Tarai are examples. With the eventual development of the east–west and north–south road network in western Nepal, we may very well see the growth of such secondary gateways linked to urban centers like Nepalganj and Dhangadhi.

Hill towns like Ilam, Dhankuta, and Tansen may thus be considered tertiary gateways. Traditionally, the gateway functions of these towns have been complemented by their administrative functions. The tertiary gateway-cum-administrative towns in the hills are extremely sensitive to infrastructural alignments and administrative decisions. There are several examples in the hills of Nepal where traditional lower-order gateways have lost their importance due to the alignment of new roads, relocation of administrative headquarters, and change in the pattern of trade and commerce (Messerschmidt 1980). The gateway importance of Tansen, for example, has declined because of the direct road link between Butwal and Pokhara.

By virtue of their location and increasing administrative and political importance, the Hill region in general has two higher-order central places: Kathmandu in the valley and Pokhara in the Central Hills. The traditional gateway-cum-entrepôt function of Kathmandu did not survive the nineteenth century, but its central-place functions have been enhanced as a consequence of road links and its role in the modernization and development process as the political, cultural, and administrative capital of the country. As higher-order central places the Kathmandu Valley towns have also


Ramnagar
Nainital
Jaspur
Kashipur
Hadwani
Bazpur
Rudrapur
Mahendranagar
Pithoragarh
Nedria
Hasanpur
Kichha
Dhangadhi
Birendranagar
Pilibhit
Puranpur
Palia Kalan
Singahi Bhiraura
Bisalpur
Nepalganj
Gola
Lakhimpur
Mohannadi
Daurehra
Nanpara
Kheri
Bhinga
Bahraich
Balrampur
Tulsipur
Utraula
Tetri Bazaar
Nautanwa
Gonda
Colonelganj
Intai Rampur
Bansi
Medhawal
Siswa
Bagaha
Nawabganj
Khalilabad
Basti
Gorakhpur
Pipraich
Maghar
Barhalganj
Tribhuvannagar
Tansen
Butwal
Siddharthanagar
Bharatpur
Pokhara
U T T A R P R A D E S H
B I H A R
40 20 0 40 80 120 km.
N E
Area shown
LEGEND
Above 100,000
50,000–99,999
20,000–49,999
10,000–19,999
International boundary
State boundary

Map 7. Distribution of urban places in Nepal and contiguous districts in India: 1981 [eastern Nepal]


Area shown
A
L
LEGEND
Above 100,000
50,000–99,999
20,000–49,999
10,000–19,999
International boundary
State boundary
40 20 0 40 80 120
km.
Kathmandu
Lalitpur
Bhaktapur
Hetauda
Birganj
Narkatiaganj
Raxaul
Bettiah
Sagauli
Motihari
Bairgania
Sitamarhi
Belsand
Jainagar
Jhanjharpur
Janakpur
Lahan
Rajbiraj
Birpur
Nirmali
Supaul
Madhepura
Saharsa
Banmakhi
Bihariganj
Muraliganj
Kasba
Purnia
Dhankuta
Ilam
Dharan
Biratnagar
Jogbani
Farbesganj
Araria
Bahadurganj
Kishanganj
Bhadrapur
Cart Road
Thakurganj
Darjeeling
Kalimpong
Kurseong
Siliguri
BANGLADESH
WEST
BENGAL
B
I
H
A
R

Map 7. Distribution of urban places in Nepal and contiguous districts in India: 1981 [western Nepal] influenced the growth of lower-order central places and market centers in the immediate Hill region (Shrestha 1973–74:19–39). Economically, however, the valley towns are dependent on the primary gateway town of Birganj, just as Birganj owes its commercial significance as a gateway town to its links with Kathmandu.

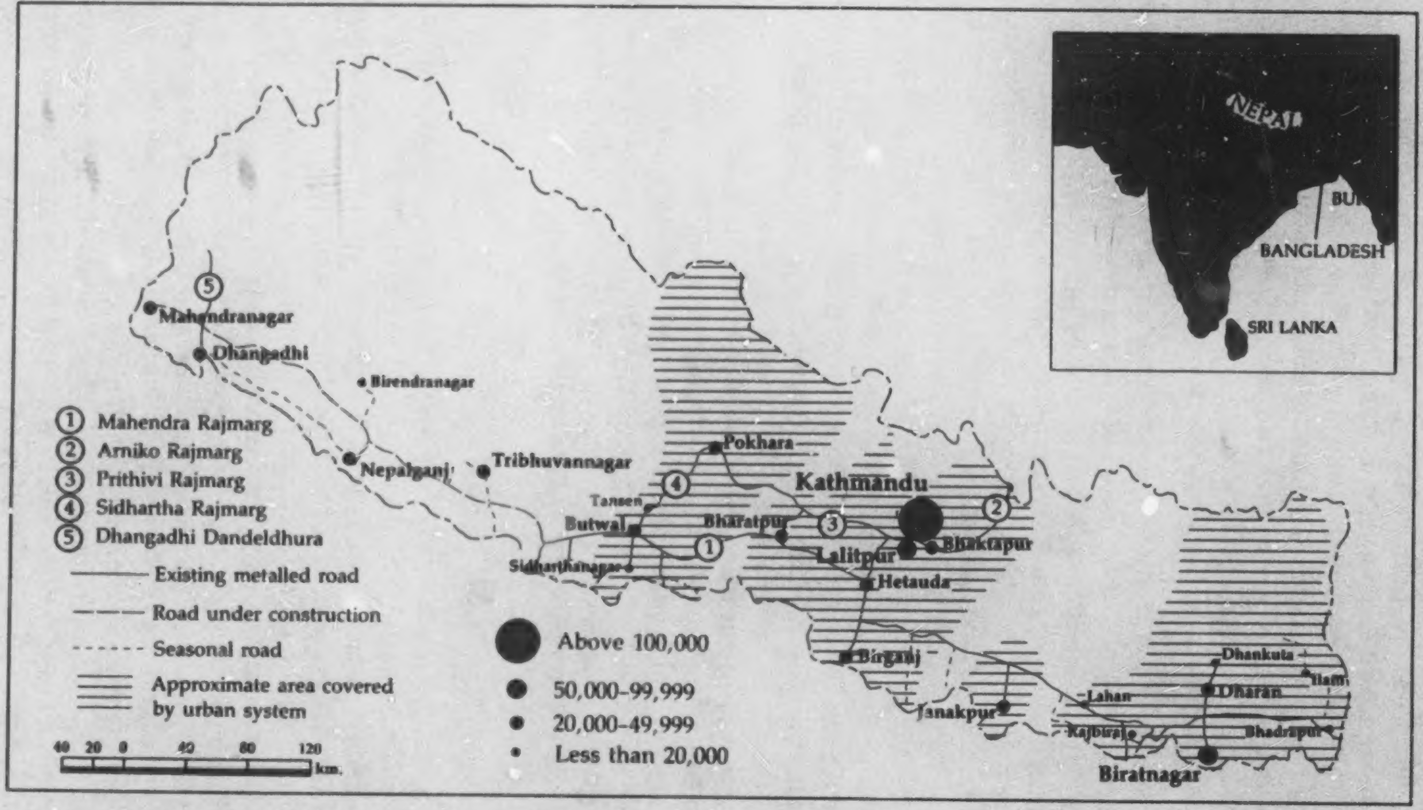
Pokhara, unlike Kathmandu, never played the role of a gateway town. It has traditionally remained a political-administrative center. In the last two decades its central-place functions have been enhanced as a result of increased connectivity as well as its status as the regional administrative and service center. The economic ties of Pokhara with Kathmandu as well as with the Central Tarai and Inner Tarai urban centers have been strengthened because of road links.

System of Urban Places in Nepal

This discussion illustrates that the Nepalese urban system is, to a large extent, defined by the south–north hierarchy of gateway towns. In an economic sense the Nepalese urban system is oriented southward toward the major urban-industrial centers of northern India rather than inward. The road link between the primary gateway towns and hill central places like Kathmandu and Pokhara has enhanced the gateway function of border towns while at the same time they are also playing the role of central places in their own right. The central-place role derives from the increasing concentration of education, health, and extension services in border towns. It may be noted that the primary gateway towns have weak functional links among themselves but have strong ties with secondary and tertiary gateways and hill central places. Moreover, it is noteworthy that with the sole exception of the Kathmandu Valley no autonomous urban system has evolved in the hills. Each hill urban center derives it sustenance from its economic ties with the secondary and primary gateway towns of the Tarai.

On the basis of the foregoing discussion, three more or less tentatively defined urban systems can be recognized in Nepal (Map 8):

- The *eastern urban system* consists of Biratnagar, Dharan, and Dhankuta in descending gateway order. Rajbiraj, Bhadrapur, Lahan, and Ilam may also be considered part of this system. Biratnagar functions as a higher-order central place to these latter towns.
- The *Kathmandu urban system* comprises of the valley towns with Kathmandu at the apex. The primary gateway of Birganj and the secondary gateways of Hetauda and Bharatpur are also functionally part of this system.



NEPAL
BU
BANGLADESH
SRI LANKA
Mahendranagar
Dhangadhi
Birendranagar
Nepalganj
Tribhuvannagar
Pokhara
Tansen
Butwal
Sidharthanagar
Bharatpur
Kathmandu
Lalitpur
Bhaktapur
Hetauda
Birganj
Janakpur
Lahan
Rajbiraj
Dhankuta
Dharan
Ilam
Bhadrapur
Biratnagar
① Mahendra Rajmarg
② Arniko Rajmarg
③ Prithivi Rajmarg
④ Sidhartha Rajmarg
⑤ Dhangadhi Dandeldhura
Existing metalled road
Road under construction
Seasonal road
Approximate area covered by urban system
40 20 0 40 80 120 km.
Above 100,000
50,000-99,999
20,000-49,999
Less than 20,000
① ② ③ ④ ⑤

Map 8. Road network and system of urban places in Nepal: 1981

- The *central urban system* consists of Pokhara (the dominant central place in the Central Hills), the primary and secondary gateways of Sidharthanagar and Butwal, and the partially dysfunctional tertiary gateway of Tansen. With the opening of the Bharatpur–Mugling road connecting the east–west highway and the Kathmandu–Pokhara (Prithvi) highway, the eventual integration of the central and the Kathmandu urban systems appears likely. The town of Bharatpur may well play a pivotal role in the functional integration of the two systems.

The town of Janakpur in the Eastern Tarai, a primary gateway and of much commercial significance, does not seem to be part of any system in terms of functional interdependence. Similarly, the linkages between urban centers in the Western Tarai and Inner Tarai are not well defined. Nepalganj has remained a traditional primary gateway in the Western Tarai. Dhangadhi's role as the primary gateway has been enhanced by the Dhangadhi–Dandeldhura highway, which links it with the Western Hill hinterland. The completion of the western segment of the east–west highway will help define the urban system in the Western Tarai and Inner Tarai. The Western Inner Tarai towns of Birendranagar and Tribhuvannagar, however, appear to have better functional relations with the primary gateway of Nepalganj than with other Western Tarai urban centers.

The system of urban places in Nepal traced here indicates that a nationally integrated urban system is far from emerging. The expansion of the road network, the regional shifts in population reflected in the increasing incidence of Hill to Tarai migration, and the consequent changes in production and commercial relationships appear to be the major forces determining the evolution of the system of urban places in Nepal.

EMERGING TRENDS

There are a number of inherent problems in outlining the emerging trends of urbanization in Nepal. The first concerns the very definition of an urban area. Earlier we noted the lack of specified functional and contiguity criteria in the designation of urban areas (*nagar panchayats*). Reclassification (addition of new *nagar panchayats*) and annexation (overbounding of existing *nagar panchayats*) have both contributed perhaps considerably to the increased levels of urbanization witnessed in successive intercensal decades. While the ad hoc nature of designating *nagar panchayats* is quite evident, we know nothing of the extent to which existing urban areas have been overbounded and the extent to which areas that could be considered urban relative to existing *nagar panchayats* have been excluded from urban status. Unless a better statistical base is created to designate urban areas, reclassification as well as annexation are likely to contribute to apparent urban growth and urbanization in the future. In 1982, after the preliminary results of the 1981 census were barely out, six new localities were reclassified as *nagar panchayats* and the number of *nagar panchayats* went up from 23 to 29. (For their location see Map 9). Including these six new urban areas the urban population of Nepal crossed the million mark (1,043,963) and 6.95 percent of Nepal's population was classified urban.[15]

The second problem is related to the probable effects of the continuing demographic shift from the Hill/Mountain region to the Tarai on the nature and functional hierarchy of the settlement system in the origin and destination regions. The number of interregional lifetime migrants more than doubled between 1961–71 and 1971–81. This trend may well continue in the future. It is also likely that urban migration will continue to follow closely the trend in Hill-to-Tarai migration witnessed in the past. Given the resource picture of the Tarai and inner Tarai (forest depletion and increasing scarcity of potentially arable land), as well as the pressure of population in most of the Hill districts (N. R. Shrestha 1982:197–212), the volume of urban-oriented migration is likely to increase in the Tarai, Inner Tarai, and Hill towns. The extent of the pull that urban areas in general will exert on potential Hill/Mountain migrants will, to a large extent, be contingent on the economic base and the structure of employment of existing and emerging urban areas.

The trade and commercial vitality of the Tarai towns derives mainly from Nepal's economic dependence on India. This situation will continue to make the border towns the focus of the Nepalese urban system and hence ensure the system's orientation southward to India.

Though the spatial, resource, and economic parameters determining the hierarchy and linkages of the settlement system in the Tarai as well as the Hills remain largely conjectural, the dominance of the primary gateway towns of the Tarai appears likely to continue. The continuing Hill–Tarai migration (complemented by increasing immigration from across the

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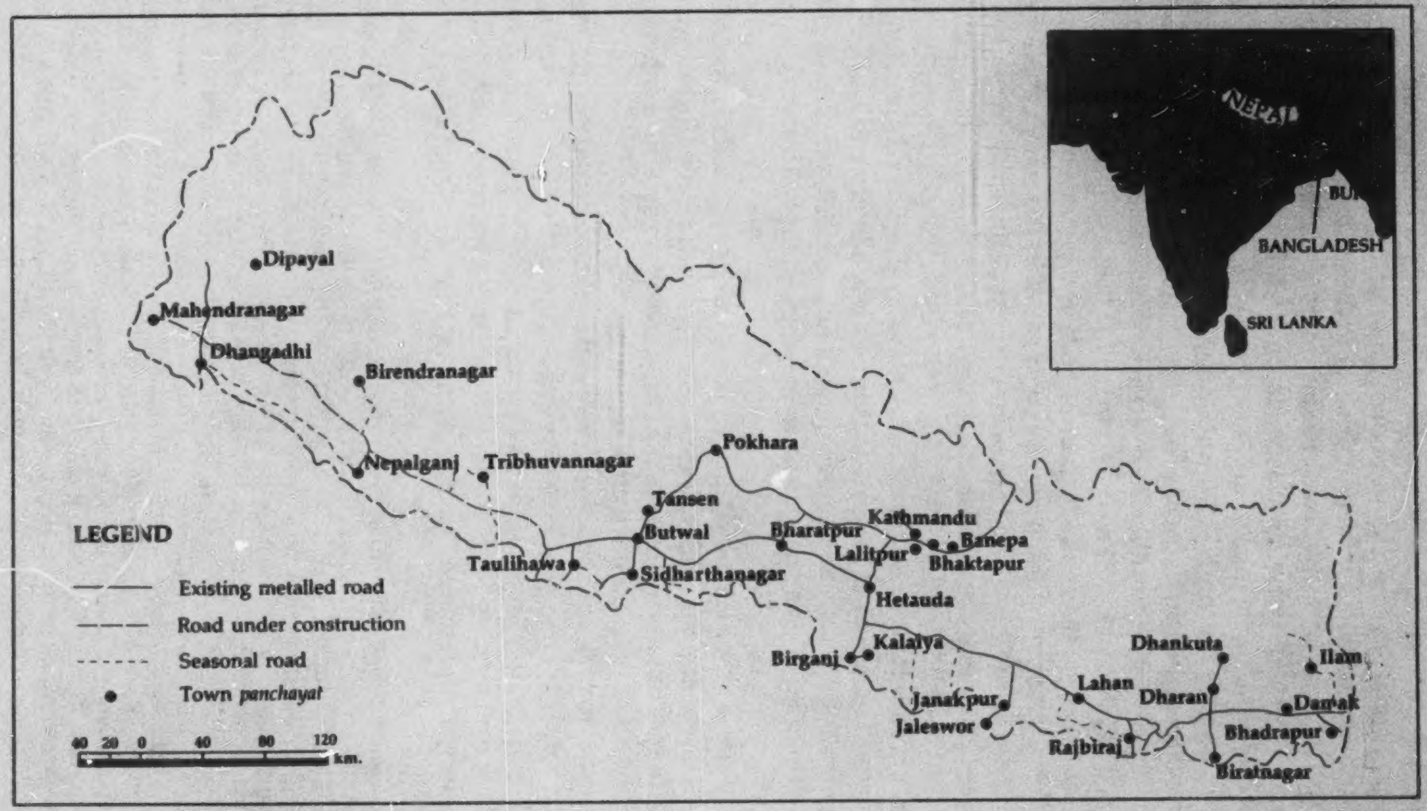
[15] The *panchayats* reclassified urban in 1982 are Damak (25,081), Jaleswar (16,000), and Kalaiya (14,047) in the Eastern Tarai; Taulihawa (12,112) in the Central Tarai; Banepa (10,540) in the Eastern Hills; and Dipayal (9,462) in the Western Hills. Of the six new *nagar panchayats*, Jaleswar, Taulihawa, and Kalaiya are situated near the border. Damak owes its growth to its location along the east–west highway. Banepa, a historic trade center adjacent to the Kathmandu Valley, was a classified urban center in the 1961 census but was declassified later. Dipayal, a small village until recently, owes its population size to substantial overbounding and its urban status to its designation as the regional development center for the Far Western Development Region. All the new *nagar panchayats* with the exception of Dipayal are accessible by road.

As a consequence of this reclassification, the regional levels of urbanization in the Eastern and Central Tarai have gone up to 6.99 and 6.87 percent respectively. The Western Hills have an urban population for the first time. As of 1982 the Tarai and the Inner Tarai accounted for 55.3 percent of the total urban population of Nepal.


NEPAL
BU
BANGLADESH
SRI LANKA
Dipayal
Mahendranagar
Dhangadhi
Birendranagar
Nepalganj
Tribhuvannagar
Pokhara
Tansen
Butwal
Taulihawa
Sidharthanagar
Bharatpur
Kathmandu
Lalitpur
Banepa
Bhaktapur
Hetauda
Birganj
Kalaiya
Janakpur
Jaleswor
Lahan
Rajbiraj
Dhankuta
Dharan
Ilam
Damak
Bhadrapur
Biratnagar
LEGEND
Existing metalled road
Road under construction
Seasonal road
Town *panchayat*
40 20 0 40 80 120
km.

Map 9. Urban places in Nepal: 1982

border to the Tarai) will determine the pace of urban growth in the Tarai and the Inner Tarai as well as in the Hills in general in the future.

The third problem concerns the impact of new road and infrastructure development on the regional settlement system. The growth and function of settlements in Nepal have been extremely susceptible to road accessibility. While the impact of roads in the regional resource context has not been adequately appreciated, there is no doubt that roads have oriented the growth of functionally urban settlements in Nepal, be it in the Hills or in the Tarai and Inner Tarai. Roads have provided a novel spatial-economic context for the growth of markets and small towns, for the provision of central services, and even for administrative headquarters. Roads have had two effects on the settlement system in general: south–north roads linking the Tarai with the Hills have tended to lead to an accentuated growth of a hierarchy of gateway settlements, and east–west roads have tended, particularly in the Tarai, to redefine central places in terms of provision of goods and services. The expansion of north–south road links in the future may well increase the functional importance of secondary gateway towns in the foothills and make these towns the primary destination of interregional urban-oriented migrants—a trend that is seen in both the 1971 and 1981 censuses. As in the past, governmental investment in infrastructure will play a major role in the growth of Inner Tarai and Tarai foothill urban settlements.

Urban growth in the Hills will remain contingent on accessibility and the limited (and in all likelihood declining) potential of the resource base to absorb increasing population. Hill towns—those in existence and those that will emerge in the future—will be tertiary gateways or district/regional service centers. To this extent urbanization in the Hills will remain a function of governmental investment in roads as well as infrastructure.

As the road network continues to develop, the functional primacy of Kathmandu will gradually decline though it will undoubtedly remain the dominant metropolis of Nepal. The Kathmandu Valley towns in all likelihood will emerge as part of a metropolitan region constituting a functional whole.

Given the problematic definition of "urban" area and the lack of present knowledge about the structure of the Nepalese settlement system, projecting the urban population of Nepal is a task beset with pitfalls. Table 46 suggests the enormous range of differences in the perception of Nepal's urban future. It highlights the varying perception of what is considered "urban" in the Nepalese context and the differing scenarios of the growth of the urban population in Nepal in the future.

The "medium variant" UN projection is the latest in a series of global urban population projections made by the United Nations Population Division (UN 1985). The basis of this projection for Nepal is not at all clear,

Table 46. Projections of urban population: Nepal, 1981–2001

Projection	Total population	Urban population		Average annual growth rate	
	(thousands)	(thousands)	[% urban]	Total population	Urban population
United Nations[a]					
1980	14,667	730	[1.98]		
(1981)	(15,022)	(957)	(6.37)		
1990	18,470	1,253	[6.78]	2.33	5.55
(1991)	(18,912)	(1,642)	(8.68)		
2000	23,048	2,260	[9.81]	2.24	6.08
(2001)	(23,601)	(2,963)	(12.55)		
World Bank (IBRD)/PADCO[b]					
1981	15,020	958	(6.38)	2.62	6.55
1991	19,453	1,807	(9.29)	2.62	7.08
2001	25,194	3,580	(14.21)		
Goldstein et al.[c]					
1981	15,020	958	(6.38)	2.66	8.68
1991	19,524	2,203	(11.28)	2.66	8.69
2001	25,377	5,067	(19.97)		

Note: Figures in parentheses are total and urban population computed by using the growth rates intrinsic to the UN projection. Total and urban population recorded in the 1981 census is taken as the base.

a. This is the "medium variant" scenario. Urban places have been defined as places with population above 5,000 with "urban" characteristics. Source: UN (1985).

b. The IBRD projected population for urban settlements is based on two hypotheses. The second—and the one with most likely assumption—uses a constant net national growth rate of 2.62 percent between 1981 and 1990. Growth rate of the mountain and hill population is assumed at 1.43 and 1.62 percent per annum respectively. An increase of 20 percent over 1980 density on arable land in the hills, and a decrease in the number of rural to rural migrants by 10 percent per year primarily due to diminishing supply of vacant land in the Tarai, is also assumed. Net migration from rural areas is assumed to remain constant, however. Thus a larger proportion of migrants will be entering urban areas. This results in a hill town growth rate of 6.07 percent per annum and Tarai and Inner Tarai town growth rate of 8.53 percent. The 1991–2001 projection made by PADCO also assumes improvements in regional infrastructure in the western region. Sources: World Bank (1982); PADCO (1984).

c. Goldstein's projections are based on 1971–81 growth rates. Source: Goldstein et al. (1983:62).

however, particularly regarding the definition of urban areas. If Nepalese urban areas are defined as in the 1961 census, then the results of the UN projection underestimate not only the future level of urbanization in Nepal but also the level witnessed in the 1981 census. In fact the definition that has been used should have yielded a larger urban population and perhaps even higher growth rates. In 1981 the level of urbanization in Nepal was 6.37 percent, nearer the level projected by the UN for 1990. If, however, the growth rates intrinsic in the UN projection are applied to the total as well as the urban population recorded in the 1981 census, the level of urbanization in 1991 and 2001 would be 8.68 and 12.55 percent respectively.

The second projection, made in a World Bank study (World Bank 1982:7–10), is based on a more likely scenario. It takes the urban and total population reported in the preliminary results of the 1981 census as its base. A constant net national growth rate of 2.62 percent a year, a continuing net migration from the Hills, and a decrease in the number of rural-to-rural migrants by 10 percent per year yields an average annual urban growth rate of 6.55 percent. PADCO's extension of this projection to the year 2001 shows that the level of urbanization in Nepal by 1991 and 2001 would approach 9.29 and 14.21 percent respectively (PADCO 1984:25–27). This projection, however, is only for *nagar panchayats* existing in 1981. The level of urbanization would be higher if allowance is made for reclassification.

The third projection in Table 46 is an extrapolation of the national and urban growth rates seen during the last intercensal decade into the future (Goldstein et al. 1983:62). At past growth rates the level of urbanization in 1991 and 2001 would reach 11.28 and 19.97 percent respectively. The scenario is based on the implicit assumption of continuing environmental and agricultural-economic problems in the Hills, which will result in an increase in migration to the Tarai and urban areas. Deriving from past trends it assumes that 56.5 percent of Nepal's projected population of 25.4 million in the year 2001 will be in the Tarai. According to this scenario, "in roughly one generation (i.e., by 2011) Nepal may be transformed from a society with a minuscule urban population to one in which over one-third of the total population live in urban areas" (Goldstein et al. 1983:62). This, however, is an overenthusiastic appraisal of Nepal's urban future.

An important aspect of both the second and third projections is the crucial role assigned to the process of internal migration in the future urban growth in Nepal in general and the Tarai region in particular. Despite the rapid increase in the urban population seen in the last intercensal decade, the level of urbanization in Nepal is still very low. At lower levels of urbanization rural–urban migration is often the main source of growth of the urban sector (Renaud 1981:17) and is likely to be so in Nepal. Given the growth in infrastructure and the road network—and the relatively quick response of these developments in terms of increased urban growth rates—

Nepal's urban future is likely to be somewhere between the World Bank/PADCO and Goldstein projections: By the year 2000, that is, between 15 and 20 percent of Nepal's population will be in designated urban areas. Public investment in infrastructure and consequent changes in the structure of economic activity amid the continuing process of Hill-to-Tarai migration will inevitably determine the nature and extent of urbanization in Nepal.

URBANIZATION AND MIGRATION POLICIES

In 1951 Nepal opened its gates to the outside world. The first economic development plan was launched in 1956. Since then periodic plans have been the chief means of articulating developmental objectives, policies, and programs. The first explicit concern of the planning process with population, however, dates back only from the Third Plan (1965–70), when a family planning program was initiated under state auspices. An examination of the population policies and programs since then suggests that attention has focused mainly on reducing the growth rate of population. Very little consideration has been given to the links between the demographic process and the interrelated processes of migration, urbanization, and spatial development.

A review of Nepal's development plans clearly reveals that the basic thrust of the development strategy has changed from one plan to the next (Paudyal 1983). Nevertheless, a number of policies can be discerned in the first six plan periods (that is, up to 1985) that have a bearing on migration and urbanization. Policies regarding the expansion of the transport network, resettlement, and regional/rural development merit our specific attention.

Expansion of Transport Network

In 1951, on the eve of the overthrow of the Rana oligarchy, Nepal had a total of 376 kilometers of road network limited to the Kathmandu Valley and parts of the Eastern Tarai (Nepal, Dept. of Roads, 1983:3). The completion of the Tribhuvan Rajpath (Kathmandu–Birganj highway) in 1956 provided the first road link between Kathmandu and the Tarai. The creation of basic physical and institutional infrastructure for development were the major objectives of the First Five-Year Plan (1956–61) and the Second Three-Year Plan (1962–65). Transport and communication sectors continued to receive high priority in terms of actual outlay well up to the Fifth Plan (1975–80). Over 30 percent of the cumulative planned outlay in the first five plans (1956–80) was devoted to the creation of transport links. The priority accorded to the development of the transport and communication sectors was justified on grounds of creating the physical preconditions for development, but considerations of internal security (rapid troop movements to deal with insurrection or unrest) appear to have been the motivating factors (Blaikie et al. 1980:42). All development plans have relied heavily on foreign assistance. The present highway network, constructed almost entirely through foreign assistance, links major Hill and Tarai settlements. These highways have remained the most influential mechanism affecting urban growth and urbanization in Nepal.

The expansion of Nepal's road network has affected urban growth and urbanization in two ways. First, the major north–south highways link the Tarai border towns with the Hill hinterland. Traditionally Nepalese trade has predominantly flowed north–south—that is, between the hills and the plains. The construction of roads has oriented the flows along road alignments, but the substance has essentially remained the same (Blaikie 1981:234). Consequently, the Tarai border towns have much greater economic significance today than ever before. Second, the new highways have also influenced the spontaneous growth of market settlements and small towns in favorable locations along the route. The construction of roads in the Hills also appears to have accelerated the long-established decline in the Hill economy in terms of the gradual elimination of cottage industry and occupational crafts (Blaikie et al. 1976). In the absence of appropriate policies and programs for the mobilization of local resources made possible by the opening of roads, the Hills have been flooded with cheap imported manufactured goods from India while the export capacity of the Hill economy has gradually dwindled.

In 1982 the total road length in Nepal was 5,021 kilometers. There is, as one might expect, an extremely close association between the length of road and the level of regional urbanization. But planning of the road network has rarely been complemented by an explicit concern for urban development, industrial location, or growth and diversification of agricultural production and off-farm employment.

Resettlement and Migration

Resettlement has been an intrinsic part of the government's strategy for redistributing population from the Hill/Mountain Region to the Tarai and Inner Tarai. As early as 1910 resettlement offices were established in Biratnagar and Hetauda to encourage habitation in the Tarai (Elder et al. 1976:11).

The Rapti Valley multipurpose project was initiated in the Chitwan district of the Central Inner Tarai during the First Plan (1956–61). The objective was to rehabilitate victims of landslides and landless peasants from the Hills. The successful eradication of malaria in the Rapti Valley in 1958 and subsequently in other parts of the Tarai encouraged large-scale migration from the Hills to the Tarai and Inner Tarai to such an extent that resettlement efforts were far short of the demand. Moreover, since a large part of the Tarai was already owned and cultivated by indigenous ethnic groups, Indian immigrants, and older Hill migrants, encroachment on government forest land became rampant. Planned resettlement was, therefore, seen as a means of checking the reckless destruction of forests. The Nepal Resettlement Company was established in 1963. By the end of the Third Plan (1965–70) four resettlement projects were under way. None of these projects managed to keep pace with the increasing demand for land from migrants or to alleviate the problem of forest encroachment. A Resettlement Department was established in 1968 to organize resettlement programs on a national scale. By 1980, the Resettlement Company and the Resettlement Department together had resettled 45,363 families on 50,459 hectares of land in different Tarai districts (Kansakar 1985:116). Spontaneous settlers, however, have far exceeded the number of planned settlers. The Fifth Plan (1975–80) document shows that during 1964–74 a total of 77,700 hectares of land was distributed for resettlement. In the same period an additional 237,600 hectares of forest land was encroached upon by spontaneous settlers (Nepal, NPC, 1975:51). Spontaneous settlers are not only migrants from the Hills but also immigrants from across the border (Ojha 1983:33).

Estimates on the true magnitude of migration and deforestation in the Tarai and Inner Tarai vary a great deal. One estimate for the 1970s shows the figure to be as high as 10,000 families per year encroaching on an average of 20,000 hectares of forest land (Dixon 1977:103). While government policies have implicitly provided the impetus for hard-pressed, land-hungry Hill peasants to migrate, the programs themselves have been woefully inadequate in planning, regulating, or dealing with the problem. Studies reveal that resettlement programs have too narrow a scope; land allotment is often made on an ad hoc basis; sites are inappropriately selected; regulatory mechanisms are inadequately enforced; and a consistent policy of appeasement and containment of encroached land has been detrimental to the credibility of the program itself (Ojha 1982; Kansakar 1979). Resettlement programs have neither improved agricultural productivity nor reduced population pressure. Since the sociodemographic relations of origin areas have remained intact in resettled areas (Shrestha and Conway 1985:77), resettlement policies and programs have largely remained ineffective in dealing with migration. The settlement structure of the Tarai has, however, been influenced by resettlement both planned and spontaneous.

Land reform—often seen as a mechanism affecting the population redistribution process—was introduced in Nepal in 1964 during the Third Plan (1965–70). Ceilings on landholdings were fixed for different regions. Landholdings in excess of the ceiling were to be acquired by the government on payment of compensation at prescribed rates. The region where the land reform was expected to be most effective was the Tarai and the Inner Tarai where inequalities in landholdings were most acute. The land reform program discouraged absentee landlordism to some extent but failed to alter the basic agrarian structure of Nepal (Regmi 1976:223). Only 62,672 hectares of excess land was acquired by the government as a result of the land reform. As a consequence, even after land reform more than 88 percent of the farming families in the Tarai and Inner Tarai had around 45 percent of total cultivated land while 3.2 percent of the families owned nearly 30 percent of the land (Kansakar 1983:246). Irrespective of the consequences of land reform the migratory pull of the Tarai has, however, continued unabated. Although the effect of land reform on the acceleration of urban growth cannot be ascertained, as in most developing countries it has induced the transfer of economic surplus to urban areas (Peek and Standing 1982:19), particularly in real estate. The astronomically high real estate prices in major urban areas in Nepal evidence the process of this transfer.

The Fifth Plan (1975–80), for the first time, mentioned the control of immigration, the planned migration from Hill to Tarai and rural to urban areas, and the development of small towns and growth centers in favorable locations as specific policies to be pursued during the plan period. The Sixth Plan reiterated many of the same policies. These policies, however, were not reflected in the programs proposed or implemented during the Fifth and Sixth Plans.

The national population strategy adopted by the government in 1983 cites the control of immigration as one of the five major strategic thrusts in dealing with the population problem. The strategy lays emphasis on the need to plan migration to the Tarai, to expand skill-oriented training to displace immigrant workers in the informal sectors of the rural and urban economy, and to develop small towns and market centers in favorable locations (Nepal, NCP, 1983b:52–53).

Specific programs to deal with the interrelated issues of immigration, internal migration, and urbanization have never been spelled out clearly. This failure is as much a reflection of the complexity of the issues as of the government's inability to deal with the basic structural determinants of migration.

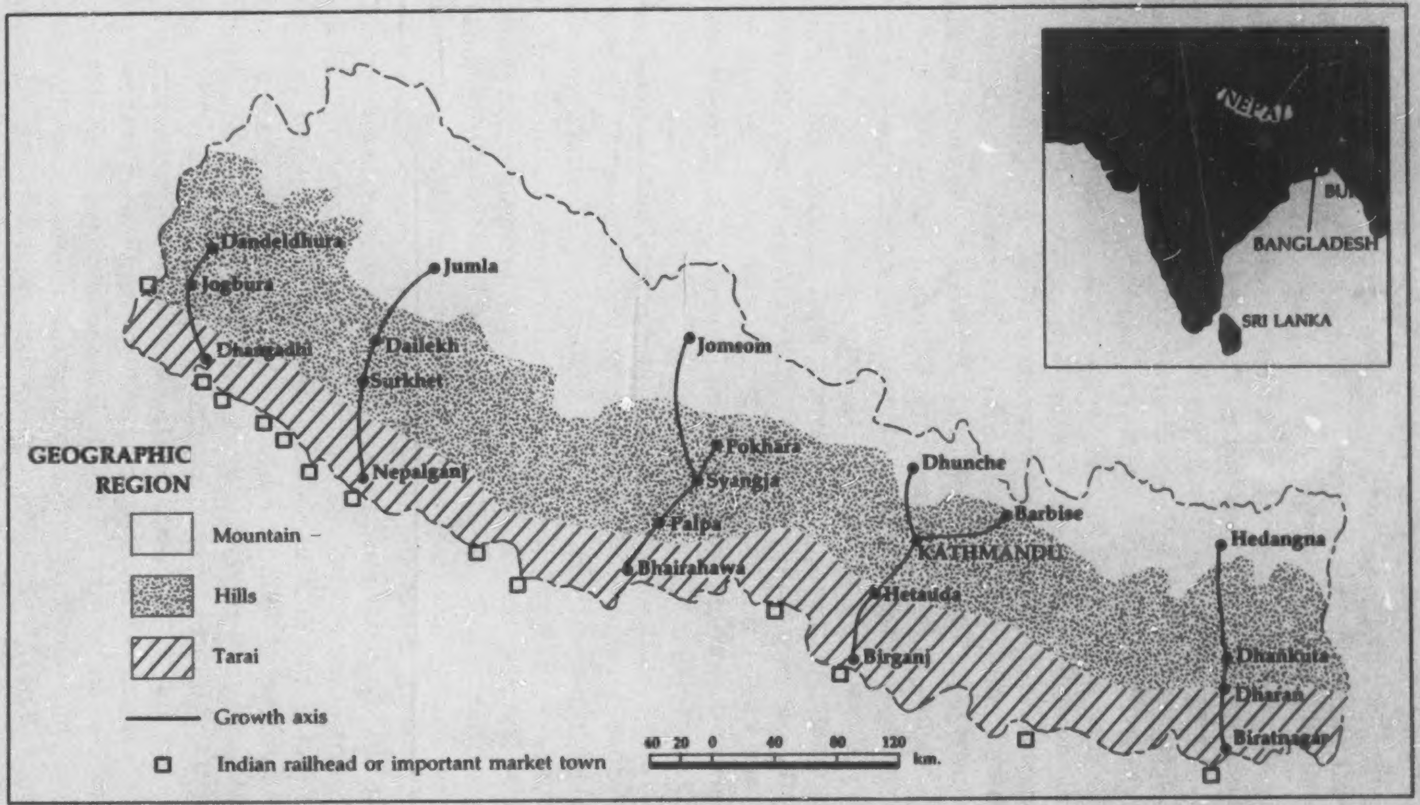
Regional Development

The Fourth Plan (1970–75) highlighted the disparities in development between the Hills, the Kathmandu Valley, and the Tarai. These disparities had been reinforced by the aggregation of development projects in the latter two regions since the beginning of the planning process. Reduction of interregional disparities, integration of the national economy, complementary planning and development of roads and economic activities, and analysis of the regional economic structures were outlined as the major objectives of the regional approach to development. The strategy itself was an adaptation of the growth pole idea.

To meet these objectives the regional development strategy proposed in the Fourth Plan called for the creation of critical infrastructural linkages between the Hills and the Tarai along selected corridors. Four growth axes were envisaged representing both the east-west and north-south territorial dimensions of the country. Nepal was divided into four development regions, and a major transport axis was proposed for each. Accordingly (Map 10), Biratnagar-Dharan-Dhankuta-Hendangna represented the axis for the Eastern Development Region; Birganj-Hetauda-Kathmandu-Dhunche/Barbise represented the axis for the Central Region; Sidharthanagar (Bhairahawa)-Butwal-Tansen-Syangja-Pokhara-Jomsom represented the axis for the Western Region; and Nepalganj-Surkhet (Birendranagar)-Dailekh-Jumla represented the axis for the Far Western Region. Dhankuta, Kathmandu, Pokhara, and Birendranagar were designated regional development-cum-growth centers for the Eastern, Central, Western, and Far Western Development Regions. Along the four growth axes a total of 21 growth points were identified. The strategy argued for the comprehensive development of these growth centers and growth points. Growth centers were to develop as polyfunctional settlements catering to the diverse needs of their hinterland, as marketing and service centers, as centers of agricultural transformation, and as locations for eventual industrial development wherever feasible (Gurung 1969).

The growth center/growth axis hypotheses appreciated the need to develop a graduated hierarchy of settlements that could articulate the potential of the Hill settlement system in their relation to the Tarai economy and settlement system. Complementary infrastructural and developmental investments in strategic locations deriving from an analysis of the regional economic structure were deemed as the process of "seeding" growth. The strategy visualized an eventual evolution of major east-west and north-south road networks that would create an altogether novel locational matrix in the country. The development of such a matrix, with growth centers at the vertex, was based on the assumption that the "integration," "equity," and "efficiency" objectives of national development could best be met through the process of deliberate urbanization. Such a process of induced urbanization was seen as essentially complementary to the objectives of interregional and intraregional balance and rural development. The implications for the migration process are therefore implicit in the strategy.

In the 1970s some of the infrastructural links envisaged in the growth axis proposition were realized. The physical and administrative/service infrastructure in regional development centers like Dhankuta, Pokhara, and Birendranagar (Surkhet) have been improved considerably. These develop-


NEPAL
BU
BANGLADESH
SRI LANKA
Dandeldhura
Jogbura
Dhangadhi
Jumla
Dailekh
Surkhet
Nepalganj
Jomsom
Pokhara
Syangja
Palpa
Bhairahawa
Dhunche
Barbise
KATHMANDU
Hetauda
Birganj
Hedangna
Dhankuta
Dharan
Biratnagar
GEOGRAPHIC REGION
Mountain
Hills
Tarai
Growth axis
Indian railhead or important market town
40 20 0 40 80 120
km.

Source: Based on Gurung (1969).

Map 10. Spatial strategy for regional development proposed in the Fourth Plan: 1970-75 ments, however, have not been complemented by commensurate analysis of regional economic structures or by specific regional investment policies.

The pattern of industrial location has changed only slightly since the enunciation of the regional development strategy. A 1981 inventory of medium- and large-scale industries in the country shows that 52 of the 64 industrial units were concentrated in the Eastern Tarai, the Kathmandu Valley, and the Central Inner Tarai. No such units existed in the Hill region (Gurung 1982: app. B). Tax benefits and lower interest rates for industries located in backward areas have remained in existence for over a decade. The latest industrial policy (Nepal, Ministry of Industries, 1982) provides tax holidays, excise duty exemptions, and concessional interest rates to industries located in backward areas. The economic advantages of locating industries in existing areas, however, far outweigh the limited incentives awarded by the government. Moreover, there is no clearly specified industrial location policy even though the creation of new road networks has made such a policy imperative.

The regional development strategy never attained the status of a national commitment. Given the experience of other countries with the growth pole strategy (Lo and Salih 1978:257-60, 1981:132-34; Hansen 1981:113-30) and the resource framework of the Hills, it is doubtful whether implementation of the strategy would have led to the development of industrial locations in the Hills capable of absorbing Hill-Tarai migrants and dispersing urbanization in the Hills. The experience in Nepal shows that the tertiary effects (increase in service employment and retail trade) have far superseded the secondary effects (increase in manufacturing employment).

The major strategy for rural/regional development since the Sixth Plan (1980-85) has been to pursue the basic needs approach. Integrated Rural Development Programs (IRDP) have been the primary instruments for implementing the basic needs strategy. The IRDPs have also been seen as attempts to connect the notion of regional development with agricultural planning and rural development. The implicit objectives of IRDPs have been to stabilize population in the Hill region through the creation of basic infrastructure, through agricultural development and extension programs, and through afforestation programs to check further ecological deterioration of the Hill environment. Though it may be too early to judge the efficacy of the Integrated Rural Development Programs, certain implications of these efforts are already evident. Experience with the IRDPs to date suggests that their objectives are not even remotely being met. The economic and ecological roots of migration have remained intact and, indeed, according to one commentator, "if the programs are continued under the present arrangement, rural inequality, poverty, and environmental deterioration will continue to hasten the onset of a major disaster in Nepal" (Banskota 1983:70).

In the conditions of Nepal spatial policies by themselves are incapable of inducing any fundamental change in spatial-economic structures. Spatial policies, like the growth axis proposition in Nepal, have ignored the historical development of the Nepalese state and the structural implications of people-oriented development in its specific dependency context (Blaikie 1981:231–58). Quite clearly, the crisis of stagnant production and growing population, of marked spatial inequalities, of ecological dislocation and survival, cannot be addressed merely by spatial policies with the rhetoric of decentralization, social justice, and equity. The root of the problem lies in economic relations both internal and external. To date, neither sectoral nor spatial policies in Nepal have even formulated the problem adequately.

Nepal's experience makes it clear that urbanization and migration policies cannot be formulated, let alone pursued, without reference to the larger structural issues of which both are part. While such issues have largely been ignored, the Seventh Plan (1985–90) makes explicit reference to an urbanization policy for Nepal for the first time.

Urbanization Policies in the Seventh Plan (1985–90)

Rapid growth in urban population, tremendous pressure on urban services, the deteriorating Hill environment and consequent demographic shift, the increasing population pressure in the Hill as well as the Tarai rural areas—all have led to the realization in the Seventh Plan that an explicit urbanization policy can no longer be avoided. The urbanization policy proposed in the Seventh Plan has three interrelated objectives: to strengthen the complementarity between rural and urban development programs, to promote opportunities for gainful employment in urban areas, and to initiate a planned process of urban development. Rural–urban migration is regarded as a positive development that can reduce the population and environmental pressure in the rural hills while increasing the impact of rural development efforts. At the policy level the following guidelines, which will be refined with time, have been proposed (Nepal, NPC, 1985:87–88):

- Decentralization of urban planning, programming, and management functions at the local level
- Expansion of urban job/skill training and human resources development programs in urban localities
- Development of medium- and long-term urban investment strategies for urban areas
- Emphasis on urban development programs that support economic development and provision of services to the rural hinterland
- Mobilization and expansion of the resource base of urban areas to make urban development self-financing

- Improved services, housing conditions, and the general environment of urban areas
- Encouragement of the private sector to play an important role in urban development with specific emphasis on job creation, training, and land and housing development

The Urban Task Force constituted by the National Planning Commission for the Seventh Plan has suggested that an urban policy and investment unit be established within the Planning Commission. Such a unit in conjunction with other agencies will carry out studies to prepare a medium- and long-term urban policy and development strategy. A survey of existing settlement functions should create a comprehensive urban statistical base and provide a better basis for urban definitions and a better system of town classification. The major focus of such an exercise would be to contribute to an analysis of the development potential and future costs for creating jobs and developing infrastructure among settlements. A classification of urban settlements on the basis of function, location, and size has been proposed. Such a classification will have definite implications regarding subsequent support in terms of infrastructure development, direct productive investments, and urban development programs. The development of market towns and service centers forms an essential part of the urbanization policy. At the policy level such developments have been perceived as the means of strengthening the complementarity between urban and rural development. The service center concept has been incorporated in Integrated Rural Developemnt Programs in recent years and has remained a basic element in the government's decentralization policy. Despite these guidelines the substantive and operational implications of the policies have not been explored.

Nepal has expressed considerable dissatisfaction with the existing distribution of its population. The argument that state intervention is necessary to regulate migration and mitigate its adverse consequences (Mabogunje 1981) has never been questioned in Nepal. But the formulation of migration and urbanization policies as essential components of an overall development strategy—linked and harmonized with sectoral policies on industrialization, agriculture, and social welfare—has remained conspicuous by its absence.

POLICY IMPLICATIONS AND AREAS FOR RESEARCH

The urban growth process, the characteristics of urbanization, the pattern of the urban settlement system, and the policies that bear on urbanization documented in this study show the extreme paucity of our knowledge in these areas. A national urbanization policy that is divorced from an adequate appreciation of current trends and factors influencing urban growth and urbanization can only be an ad hoc approach to a very complex problem. Thus creation of an urban statistical base—and appraisal of the links between urbanization, migration, and development in Nepal's situation—are of enormous policy relevance in Nepal.

Urban Statistical Base

The primary source of urban data in Nepal is the census. Selective census information exists only for designated urban areas. Arbitrary reclassification and changes in urban boundaries render much of the data incomparable and also inconsistent over time.

The primary issue is the definition of what constitutes an urban locality in Nepal. This question necessitates an appreciation of the full range of human settlements in terms of size and function. We have seen that using the *panchayat* as the basis of urban delimitation does not illuminate the definitional issue. Indeed, using test criteria such as population size, contiguity, and occupational structure of population in settlement units will provide a better basis of urban definition. While there is considerable merit to the inclusion of suburban or fringe areas and populations within the urban limits of areas like Kathmandu, this practice in the case of smaller urban places gives a distorted picture of urban growth. Further, an area defined as urban on the basis of such test criteria as population size, contiguity, and occupational structure need not necessarily be a designated *nagar panchayat*. The Central Bureau of Statistics should therefore be the key agency in determining whether a settlement qualifies as an urban area. This task necessitates that the primary focus of the census should be on *settlement units* within *panchayats* and not on *panchayats* per se.

Given the nature of the census operation, we cannot expect to gather all relevant urban information from the censuses alone. Nevertheless, census information has to be the primary means for furnishing two types of vital information: (1) statistical accounting of reclassified areas (new towns as well as areas annexed within old towns), both in terms of population and area in each census, and (2) migration streams (rural to urban, urban to urban, urban to rural) by spatial units (districts, development regions, ecological regions) and attributes of migrants. If past trends continue, which in all likelihood they will, population movement and redistribution will remain the most conspicuous features of Nepal's population dynamics. They will also be the topics of most interest to planners and policymakers. Inclusion of this information will contribute to a better appreciation of the components of urban growth and the evolving nature of urbanization—issues vital to the formulation of a comprehensive urbanization policy in Nepal.

The limitations of the census information are well known. Data that require detailed investigations—such as household or individual decision-making processes, the various types of migratory moves and their implications, detailed socioeconomic attributes of migrants, functional attributes of settlements, changes in functional linkages among settlements, and so forth—cannot, for practical reasons, be derived from the censuses. Survey research will, therefore, have to be increasingly relied upon in establishing the relationships between demographic, social, economic, and spatial changes associated with urban growth and urbanization (Goldstein and Goldstein 1981).

Some of the most pertinent questions that can be addressed through survey research relate to the process of urban migration and demographic, social, and economic change (Thapa 1982:55–72). For instance, very little is known about the number and attributes of urban migrants: Who are they, where do they come from, what sectors of the urban economy are they absorbed in, and what are the implications of the migration process for origin as well as destination areas?

The various types of migratory moves (short-term, long-term, seasonal, circulatory, commuting, stepwise, repeat) to urban areas remain entirely unknown. Studies made in rural areas reveal that seasonal and semi-permanent migration comprises a significant proportion of the migrant population and is an important source of cash flow to rural areas (McDougal 1968; Caplan 1972; Dahal et al. 1977; Fuhrer-Heimendorf 1975, 1985). Moreover, the expansion of the road network in and around urban areas appears to have led to substantial increases in commuting to urban places like Kathmandu. Studies in border Tarai towns show that there is considerable commuting across the international border, though not much is known about the nature and impact of these commuters on the urban economy of the Tarai (Nepal, NCP, 1983a:35–38). Recent literature suggests that circulation plays a much greater role than has been recognized in the continuing dialectic among and within households and communities and has wide-ranging implications (Prothero and Chapman 1985:1–26).

Census information shows that a certain amount of age and sex selectivity characterizes migration to most urban areas. At least one study reveals that migrants to Kathmandu are comparatively young, educated males (Thapa and Tiwari 1977). The demographic structure of migrants will have a bearing not only on urban areas but also on rural areas. Migration of young adult males deprives the rural areas of their most innovative assets for change and may be counterproductive to the policy of rural–urban complementarity. Analysis of the Nepal Fertility Survey (NFS) data for 1976 (Nepal, FP/MCH Project, 1977) shows that infant and child mortality rates are substantially higher in rural than in urban areas; the differences are more pronounced for child mortality than infant mortality (Gubhaju 1984:201–27). Infant and child mortality rates were also found to be substantially lower among children whose mothers had spent their childhood in a town. Differences in child mortality also varied by education of the parents. The small urban sample in the NFS makes generalizations hazardous, but migration appears to have definite implications for the demographic process of urban areas. More than half the urban women in the NFS sample were found to have spent their childhood in a village.

Census information also shows that the proportion of married males and females was lower in urban areas than in rural areas. Moreover, the mean age at marriage was found to be higher in urban than in rural areas (Nepal, CBS, 1985b:40). In the context of Nepal where population redistribution policies have to go hand in hand with reducing the growth rate of population, detailed investigations of the fertility, nuptiality, and mortality aspects of migration are clearly warranted.

As early as 1975 Gaige found that about a third of the migrant families in a sample of 99 Tarai villages were from India (Gaige 1975). The National Commission on Population survey shows the incidence of immigration to have increased in recent years (Nepal, NCP, 1983a). Indications are that immigrants are increasingly involved in the secondary and tertiary sectors of the Nepalese urban economy. Non-Nepalese comprised nearly one-fifth of the total national manufacturing employment in 1981 (Nepal, CBS, 1985a). In urban localities like Biratnagar, the major industrial hub of Nepal, as much as 43.5 percent of industrial labor is reported by government sources to be comprised of immigrants from across the border (Sharma 1985). This phenomenon raises important policy questions of both economic and political significance. A comprehensive understanding of internal and international migration vis-à-vis urban growth, changes in the occupational structure, and growth of the informal sector in the urban economy is essential before a broad picture of urban growth and urbanization in Nepal can emerge.

Studies dealing with the causes and consequences of migration in general are limited. Most studies show economic and ecological reasons (declining productivity, landslides, indebtedness) to be of primary importance in internal migration (Bista et al. 1977; Dahal et al. 1977; Conway and Shrestha 1981). Economic opportunities and social facilities were cited as the main reasons for migration in a study of in-migration patterns in Kathmandu (Thapa and Tiwari 1977). Income differentials between urban and rural areas have also been noted. But the implication of these differentials for urban migration—and the trend of these differentials over time—remain conjectural. Census figures show that the shift of population from highlands to lowlands and from rural to urban areas has not led to substantial changes in occupational structures. If this is true, can such a process be sustained? Will large-scale urban migration shift the locus of poverty and deprivation from rural to urban areas? These are questions of great policy relevance and worthy of serious research. The creation of a better statistical base, complemented by surveys designed to illuminate these issues, must therefore be the basis of formulating a national urbanization policy in Nepal.

Urbanization and Spatial-Economic Development

The argument for induced urbanization in Nepal appears to rest on two basic, and often conflicting, premises:

- That urbanization can be a process of reducing the pressure of population on land (both in the Hills and the Tarai) by orienting rural-to-rural migration in favor of urban areas
- That urbanization can become a means of developing a graduated hierarchy of settlements that can integrate the potential of the Nepalese settlement system in their respective resource frameworks

The first premise is built on the prognosis of a continuing large-scale demographic shift from the Hills to the Tarai and its implications for the people/land relationships and agricultural productivity of the Tarai. It is based on the widely held hypothesis that the pressure of population, resulting in higher labor/land ratios, is one of the main causes of poverty and rural out-migration. The assumption that induced urbanization will be accompanied by a structural shift in employment (from primary to secondary and tertiary sectors) capable of absorbing potential rural-to-urban migrants is at the heart of this argument. Moreover, a positive link between urbanization and development is assumed.

The second premise is tied to the policy objective of reducing interregional disparities in development (between the Hills, the Kathmandu Valley, and the Tarai, on the one hand, and between the rural and urban areas on the other) and the deliberate creation of an integrated settlement system that is oriented inward rather than outward. The assumption is that the creation of such a settlement system will enhance the complementarity of urban and rural development efforts, on the one hand, and aid in reducing the dependency of the Nepalese state and the urban system on India, on the other. In this sense spatial policies are seen as precursors or even alternatives to structural policies.

A close scrutiny of these premises suggests, however, that while the basic logic is intuitively appealing, the preconditions for their operation neither sufficiently exist nor have been adequately considered and planned in Nepal. A number of questions emerge. Is urbanization a rational response to the overpopulation of the Hill region? How can urbanization be "induced" in Nepal's resource and political-economic situation? Will concentration of a larger population in urban locations by itself induce structural shift in employment commensurate with higher productivity? What are the channels and processes through which a positive relationship can be conceived between urbanization and development? If spatial policies are to redress the problem of the dependency of the Nepalese state and the urban system on India, what are the structural prerequisites for such policies? The answers to these questions have yet to emerge.

Urbanization characterizes a dynamic region. The rapid urban growth and relentless internal and international migration to the Tarai and Inner Tarai seen in recent decades testify to the fact that the Tarai is the most dynamic region in Nepal. And it is here that future urban growth and urbanization will be most evident. The extension of commercial and trade ties with India and the existence of an open international border have only reinforced the importance of the Tarai border urban centers as the spatial manifestations of Nepal's economic dependency on India. The expansion of the road network in the country, if anything, has only reinforced the importance of Tarai urban centers. As a consequence the Nepalese urban system is oriented toward the south. The rapid growth of border urban settlements witnessed in past decades is also a reflection of the "leaky frontier" between Nepal and India (Blaikie and Seddon 1978:30–31).

Unlike other developing countries, in Nepal the growth of the capital city has not proceeded at an alarming rate. If growth trends seen in the 1971–81 period are any guide, the second-largest city may grow much faster (in absolute terms) than the capital city in the next decade. This is not to say that the problems of congestion, inadequate services, insufficient housing, urban unemployment, urban sprawl, and management are not evident. Indeed, urban problems have multiplied in all of Nepal's major urban areas and have been a matter of considerable concern in recent years (World Bank 1982:11; PADCO 1984:44–59, 1986b; Nepal, LCRC, 1984, 1985).

Government policies, however, have implicitly remained biased in favor of the growth of Kathmandu and other large border urban areas in the Tarai. The exact ramifications of such policies in terms of urban growth cannot be estimated. But these policies have been reflected in the subsidization of food and other basic commodities in urban areas through loosely regulated fixed prices; through prioritized public investment in transport, communication, and urban utilities; through government regulation of transport tariffs in urban areas; through subsidized pricing of energy and other urban utilities; through better accessibility to social welfare (school and health) programs in urban areas; and through an inordinate concentration of fiscal resources and governmental decision making. Despite these implicit policies (Fuchs 1981:41–46; Robinson 1985:18–39), Kathmandu's growth has remained tame in comparison to other urban centers, particularly in the Tarai. Up until now, Kathmandu has had only limited potential for attracting and absorbing rural migrants. Tarai urban centers, by contrast, provide scope for rural–urban migration in which members of the migrant family may be urban-based but partially land-dependent.

The experience with regional development strategy in Nepal suggests that induced urbanization in the Hills has limited prospects of success in expanding employment opportunities and, by implication, absorbing potential rural–urban migrants. Hill urban centers, with the possible exception of the valleys of Kathmandu and Pokhara, have extremely limited potential for industrial development of any consequence to the regional economies. The Hill region, in general, evidences the absence of an integrated system of central places. As a consequence the vast rural periphery of Nepal suffers from the lack of lower-order services, markets, inputs, and technology. If present trends persist, urban growth and urbanization will continue to dominate the Tarai scene. The urban settlement system will remain outward-oriented. And the cherished goal of reducing spatial inequality and integrating the space-economy of the Hills and the Tarai will remain impossible to achieve.

The situation obtaining in Nepal makes it clear that a policy of induced urbanization has to be appreciated in the context of the resource potential of the Hills and the Tarai, on the one hand, and the structural determinants of poverty, migration, and development, on the other. The consequences of expanding the road network in the past two decades testify that spatial policies by themselves can neither transform nor transcend the structural determinants of spatial-economic development. A gradual transformation in the agricultural sector then becomes the first precondition for induced urbanization in Nepal.

The achievement of some kind of steady state in the subsistence agricultural economy of the Hill region has remained the wishful goal of efforts at rural development in Nepal. Structural transformation in the agricultural sector in the Hills would demand the diversification of the agricultural sector and the introduction of changes in the relations of agricultural production. Relationships in the agricultural sector will not only determine the magnitude and extent of rural–urban migration but also the nature of the structural shift in urban employment.

The agricultural potential of the Tarai and Inner Tarai and the primate status of Kathmandu notwithstanding, the continued economic and functional growth of towns in these areas may be self-limiting unless the urban industrial sector expands rapidly. The experience of other countries suggests that the absorption of rural–urban migrants tends quickly to reach a limit defined by the saturation of the urban labor market even in the tertiary sector (Lo and Salih 1982). Rapid industrial growth of the Tarai border settlements is inhibited by the terms of trade and transit treaties with India, which will continue to assure the underdevelopment of the Nepalese manufacturing sector. Further, the rapid growth of Tarai border towns (given the leaky frontier with India) will only enhance the outward orientation of the Nepalese urban system.

In Nepal a two-pronged spatial strategy may be called for even under commensurate structural conditions. In the Tarai, where the basis for dispersed urbanization already exists, an appropriate strategy would be to shift the locus of industrial growth from border towns to inland locations. A policy of induced urbanization in the Tarai should be guided by strategic consideration of dampening the dislocating effects that may result from regulation of the open border with India. The development of the east-west and north–south road network in the Tarai provides a unique opportunity to reorient the process of urban growth from border towns to locations along the east–west highway, the foothills in particular, and the north–south corridors. This tendency, already visible in the Biratnagar–Itahari corridor and Birganj–Hetauda corridor, can be complemented by appropriate industrial location, infrastructure, and spatial development policies. This approach can induce the growth of a hierarchy of functional urban settlements in the Tarai and Inner Tarai that are better integrated with the Hill settlement and economy.

The situation in the Hills is different. Here there is a need to provide essential lower-order goods and services to the population, on the one hand, and to induce the growth of small towns that can act as centers of off-farm employment and rural industrialization, on the other. Induced urbanization in the Hills has prospects only to the extent that the relationships in the agricultural sector are altered and the structural and institutional basis for rural and small-scale agro-based industrialization is created. The rationale for regional development proposed in the Fourth Plan is still valid in the context of the Hills. What the strategy lacked was an appreciation of the linkages within the Hill settlement system and their relationships to the Tarai and Inner Tarai settlements. The strategy of induced growth from top-down (that is, regional growth centers inducing the growth of smaller "growth points") needs to be rethought in favor of induced growth of smaller but centrally placed settlements (with respect to population, resource base, flow of goods and services, and existing or planned road links). A thorough appreciation of the nature and strengths of the existing settlement system in the regional/local resource context is therefore essential.

The contention (deriving from central-place theory) that widespread economic growth requires the creation of an articulated and integrated system of settlements of various sizes and functions to serve surrounding areas (Johnson 1970) has found expression in the notion of "service centers" in rural development and decentralization policy pronouncements in Nepal. Recent literature on urbanization and rural development has highlighted the potential role of market centers, small and intermediate towns, and agropolitan centers in inducing equitable growth and acting as the spatial locus for the transformation and integration of the space economy of developing countries (Rondinelli and Ruddle 1978; Friedmann and Douglass

1978; Rondinelli 1983; Detlef Kammeier and Swan 1984). In the context of Nepal, where an integrated system of settlements is conspicuous by its absence in much of the Hill region, the service center concept can be used as a pivotal element of a spatial strategy for inducing growth from below. The locational and functional aspects of service centers—and the nonspatial policies necessary to complement their efficacy—are topics demanding research as well as policy attention in Nepal. We need to clarify the implications of the service center concept for the mobilization of existing resources, for development parameters, and for contingent migration processes.

Nepal is still at an early stage of urbanization. Urbanization in Nepal will remain fundamentally shaped by the forces operating in the rural sector. The political will for formulating and implementing a regional/rural development strategy consistent with the stated objectives of reducing spatial and socioeconomic inequalities has thus far remained conspicuous by its absence in Nepal. Policymakers in Nepal have the advantage of making an early start in this direction—an advantage that many developing countries did not have at comparable stages of development.

APPENDIX TABLES

Appendix Table 1. Urban information that can be derived from censuses of Nepal: 1952/54–1981

Measure	1952/54[a]				1961				1971				1981			
	N	R	D	T[b]	N	R	D	T	N	R	D	T	N	R	D	T
Population by age and sex	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Population by size of localities	X	X	X	na	X	X	u	na	X	X	X	na	X	X	u	na
Houses and housing units	u	u	u	X	X	X	u	u	u	u	u	u	u	u	u	u
Household size	u	u	u	X	X	X	u	u	u	u	u	u	X	X	X	X
Literacy of population by age and sex	u	u	u	X[c]	X	X	X[d]	u	X	X	X	X[e]	X	X	X	X[e]
Educational attainment of population by age and sex	u	u	u	X	u	u	u	u	X	X	X	X	X	X	X	X
Mother tongue of population by age and sex	u	u	u	u	u	u	u	u	u	u	u	u	X	X	X	X
Religion of population by sex	u	u	u	X	u	u	u	u	X	X	X	X	X	X	X	X
Place of birth and enumeration for native-born by age and sex	u	u	u	u	u	u	u	u	X	X	u	X	X	X	u	X[g]
Foreign-born population	u	u	u	u	u	u	u	u	X	X	X	X	X	X	X	X
Absentee population (6 months and over)	u	u	u	X	X	X	u	u	u	u	u	u	u	u	u	u
Present place (country) of residence of absentees	u	u	u	u	X	X	u	u	u	u	u	u	u	u	u	u
Citizenship of population by age and sex	u	u	u	u	u	u	u	u	u	u	u	u	X	X	X	X
Duration of stay in present place of residence	u	u	u	u	u	u	u	u	u	u	u	u	X	X	X	X[g]
Reasons of stay in present place of residence	u	u	u	u	u	u	u	u	u	u	u	u	X	X	X	X
Marital status of population by age, sex, and literacy	u	u	u	X[c]	X	X[e]	u	u	u	u	u	u	X	X	X	X[d]
Children ever born by age and literacy of mother	u	u	u	u	X	X[f]	u	u	u	u	u	u	X	X	X	X
Children still alive by age of mother	u	u	u	u	u	u	u	u	u	u	u	u	X	X	X	X
Children born last year by age of mother	u	u	u	u	u	u	u	u	u	u	u	u	X	X	X	X

Economically active population (EAP) by age and sex	u	u	u	X[h]	X	X[f]	u	u	X	X	X	X[d]	X	X	X	X[d]
EAP by reasons for inactivity by age and sex	u	u	u	u	X	X	u	u	u	u	u	u	X	X	X	X
EAP by employment status by age and sex	u	u	u	X	X	X	u	u	X	X	X	X	X	X	X	X
EAP by occupational division by age and sex	u	u	u	u	X	X	u	u	X	X	X	X	X	X	X	X
EAP by industry group by age and sex	u	u	u	X	X	X	u	u	X	X	X	X	X	X	X	X
EAP by industry group and occupational division by sex	u	u	u	u	X	X	u	u	X	X	X	X	X	X	X	X

Sources: Nepal, Department of Statistics (1957); Nepal, CBS (1967, 1975, 1984).

Note: N = national level; R = regional level; D = district level; T = town level; u = data unavailable; na = not applicable. Regional and district divisions in different censuses vary. In the 1981 census, industry group and occupational division of labor force have been cross-tabulated with educational attainment, marital status, and employment status.

a. The 1952/54 census was taken in two periods: Eastern Hill, Inner Tarai, and Tarai were enumerated in 1952; the rest (together with Mahottari) were enumerated in 1954.

b. All town-level information in 1952/54 is only for the three towns of the Kathmandu Valley.

c. Data for population 5 years of age and over.

d. For 70 years of age and over.

e. For 6 years of age and over.

f. For 15 years of age and over.

g. Not published—available in printouts only.

h. For all ages.

Appendix Table 2. Criteria used in designating urban localities in different census years: Nepal, India, Bangladesh, Pakistan, and Sri Lanka, 1950–81

Country	Population size	Municipal status	Occupational structure	Density
Nepal, 1952/54	5,000+	Not specified	Not specified	Not specified
India, 1951	5,000+	Municipalities, corporations, etc.	Not specified	Not specified
Pakistan, 1951	5,000+	Municipalities, corporations, etc.	Not specified	Not specified
Sri Lanka, 1953	Not specified	Municipal council, urban council, or local board	Not specified	Not specified
Nepal, 1961	5,000+	*Nagar panchayat* (1962)	Not specified	Not specified
India, 1961	5,000+	Municipalities, corporations, etc.	75% of working population in nonagricultural activities	1,000/mile^2
Pakistan, 1961	5,000+	Municipalities, corporations, etc.	Not specified	Not specified
Sri Lanka, 1963	Not specified	Municipal council, urban council, town council	Not specified	Not specified
Nepal, 1971	10,000+	*Nagar panchayat*	Not specified	Not specified
India, 1971	5,000+	Municipalities, corporations, etc.	75% of working male population in nonagricultural activities	1,000/mile^2
Pakistan, 1972	5,000+	Municipalities, corporations, town committees, etc.	Not specified	Not specified
Bangladesh, 1974	5,000+	Municipalities, corporations, town committees, etc.	Not specified	Not specified
Sri Lanka, 1971	Not specified	Municipal council, urban council, town council	Not specified	Not specified
Nepal, 1981	9,000+	*Nagar Panchayat*	Not specified	Not specified
India, 1981	5,000+	Municipalities, corporations, etc.	75% working male population in nonagricultual activities	1,000/mile^2
Pakistan, 1981	5,000+	Municipalities, corporations, etc.	Not specified	Not specified
Bangladesh, 1981	5,000+	Municipalities, town committees, etc.	Not specified	Not specified
Sri Lanka, 1981	Not specified	Municipal council, urban council, town	Not specified	Not specified

Sources: Nepal, Department of Statistics (1957); Nepal, CBS (1967, 1975, 1984); India, ORGCC (1981); Bangladesh, BBS (1984); Pakistan, PCO (1984); Sri Lanka, DOS (1982).

Appendix Table 2. *(continued)*

Country	Contingunity	Other criteria/conditions
Nepal, 1952/54	Not specified	Not specified
India, 1951	Continuous collections of houses	"Definite urban character" if population less than 5,000 or no municipal status
Pakistan, 1951	Continuous collection of houses	"Urban characteristics" if population less than 5,000 or no municipal status
Sri Lanka, 1953	Not specified	Not specified
Nepal, 1961	Not specified	"Urban environment"—high school, college, judicial and administrative offices, bazaar, communications facilities, mills, factories, etc.
India, 1961	Continuous built-up area	"Pronounced urban character" if population less than 5,000 or no municipal status
Pakistan, 1961	Continuous collection of houses	"Urban characteristics" if population less than 5,000 or no municipal status
Sri Lanka, 1963	Not specified	Not specified
Nepal, 1971	Not specified	Not specified
India, 1971	Continous built-up area	Areas constituting major project colonies, industrial development, railway colonies, important tourist centers, etc., if population less than 5,000 or no municipal status
Pakistan, 1972	Continuous collection of houses	"Urban characteristic" if population less than 5,000
Bangladesh, 1974	Continuous collection of houses	"Urban characteristic" if population less than 5,000
Sri Lanka, 1971	Not specified	Not specified
Nepal, 1981	Not specified	Not specified
India, 1981	Continuous built-up area	Areas constituting major project colonies, industrial development, railway colonies, important tourist centers, etc., if population less than 5,000 or no municipal status
Pakistan, 1981	Continuous collection of houses	"Urban characteristic" if population less than 5,000
Bangladesh, 1981	Continuous collection of houses	"Urban characteristic" if population less than 5,000, all Thana headquarters irrespective of population size; and *hat* (bazaars) that are electrified.
Sri Lanka, 1981	Not specified	Not specified

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CONTENTS

ACKNOWLEDGMENTS *vii*

ABSTRACT *1*

SOURCES AND METHODS *5*

A STATISTICAL TAXONOMY OF "SOUTH ASIANS" AND "ASIAN INDIANS" *6*

ASIAN INDIAN DEMOGRAPHY *14*

  The Remarkable Growth in Numbers *14*

  Demographic Structure in 1980 *18*

HUMAN RESOURCES *24*

OCCUPATIONS AND INCOMES *29*

FAMILIES AND HOUSEHOLDS *41*

THE ASIAN INDIAN POOR *45*

THE FUTURE OF THE ASIAN INDIAN COMMUNITY *47*

REFERENCES *51*

EXHIBIT, FIGURES, AND TABLES

Exhibit

1. The 1980 census questions on ethnicity 7

Figures

1. Relationships among the four 1980 census criteria for identifying Asian Indians *11*
2. Age and sex distributions of Asian American racial groups, by Place of Birth and period of immigration *19*
3. Population projections to the year 2030 for Asian Indians *49*

Tables

1. Persons reporting use at home of a South Asian language, by Asian Ancestry: 1980 U.S. census *10*
2. Number and percentage distribution of Asian Indians, by criteria for Asian Indian designation: 1980 U.S. census *12*
3. South Asian immigrants to the United States: 1946–84 *15*
4. Growth of the Asian American communities: 1900–80 U.S. censuses *17*
5. Projections of the future Asian American population, by Race: 2000 and 2030 *18*
6. Number and percentage distribution of native-born Asian Indians, by criteria for Asian Indian designation: 1980 U.S. census *21*
7. The share of immigrants and recent immigrants, by Race: 1980 U.S. census 22
8. Regional concentration of Asian Indians and Asian Americans: 1980 U.S. census 22
9. Main urban concentrations of Asian Indians: 1980 U.S. census *23*
10. High school completion (in percentages), by Race and sex, for two age groups: 1980 U.S. census *25*
11. High school completion (in percentages), by Place of Birth, period of immigration, and sex, for two age groups: All Asian Indians and foreign-born Asian Indians: 1980 U.S. census *26*
12. Completion of four or more years of college (in percentages), by Place of Birth, period of immigration, and sex, for two age groups: All Asian Indians and foreign-born Asian Indians: 1980 U.S. census *28*

13. Indicators of language ability among persons of ages 18–24, by Asian American group: 1980 U.S. census *29*

14. Percentage speaking English "not well" or "not at all" among persons born in India, by sex, age, and period of immigration: 1980 U.S. census *30*

15. Percentage distribution of Asian Americans and native-born Whites and Blacks, by sex and broad occupational group: 1980 U.S. census *31*

16. Percentage distribution of Asian Indians and Whites, by broad and selected detailed occupations and sex: 1980 U.S. census *32*

17. Personal incomes of Asian Indians, Japanese, and Whites, by sex: 1980 U.S. census *34*

18. Mean education (in years) and income among Asian Indians and Whites, by sex, for selected detailed occupations: 1980 U.S. census *36*

19. Personal incomes of Asian Indian and White males and females, by level of education: 1980 U.S. census *38*

20. Observed and adjusted incomes of Asian Indians, by sex, education, and nativity or period of immigration: 1980 U.S. census *40*

21. Indicators of household workforce and income among Asian Indians, Japanese, and Whites: 1980 U.S. census *41*

22. Indicators of household composition, workforce, and income, by age of householder: Asian Indians, 1980 U.S. census *43*

23. Indicators of household composition, workforce, and income, by nativity and period of immigration: Asian Indians, 1980 U.S. census *44*

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ABSTRACT South Asians have recently emerged as a dynamic and affluent cultural minority in the U.S. population. The 1980 census estimated the number of South Asians at around 400,000. With immigration continuing at around 30,000 persons per year, projections suggest more than 1 million South Asians will have joined the U.S. population by the year 2000.

Two aspects of this population's ethnicity are noteworthy. First is the group's "invisibility" to other Americans. Though Asian Americans in general have drawn attention in the mass media, South Asians are rarely mentioned. Americans find it difficult to identify South Asians by their "race" or "color." Second is the ambiguity among South Asians themselves about membership in the group. For example, many who in the 1980 census identified themselves as Asian Indian by ancestry also considered themselves to be white by race.

The format of the census tabulations dictates a focus in this paper on Asian Indians, who make up the great majority of South Asians. In socioeconomic terms the Asian Indian community is remarkably affluent, having the highest income for full-time workers in 1979 of any of the races recorded in the census. Yet analysis of household composition in relation to numbers of workers and their incomes reveals that Asian Indians do not have the highest per capita household incomes. This is because Asian Indian households tend to be large, single-earner households. Asian Indians thus differ from most other immigrant groups, for whom large households reflect labor and income pooling to maximize welfare.

The high personal incomes of Asian Indians reflect, as expected, their high educational attainments and proportions concentrated in professional occupations. But a substantial part of their income attainment advantage is not due to their high educational or occupation attainments, and not all occupational groups of Asian Indians have high incomes. Gender differentials in labor market experience among Asian Indians differ from those found in other ethnic groups. In particular, Asian Indian women have lower participation rates than do women in other Asian groups. Much of the personal income advantage of Asian Indians reflects this fact, since it means that a high proportion of Asian Indian income earners are males.

Poverty was rare among Asian Indians in 1979, and the poverty that existed did not reflect family breakdown and resulting female headship of households, in contrast to the U.S. population as a whole. Asian Indian poverty seems instead to result from low labor force participation rates and incomes in households where one or more key adult members are enrolled in school.

The future of the Asian Indian community is likely to involve continued growth in numbers but a gradual erosion of their economic advantage as the immigration of this group increasingly includes the kin of earlier migrants rather than persons immigrating on the basis of professional criteria.

The national perception of Asians living in this country has undergone a remarkable evolution in recent years—no less than a total transformation. An older generation of Asian Americans can recall vividly their being the targets of open racism. Racism certainly remains, but the contemporary public image of Asian Americans is that of responsible adults with substantial earnings reflecting their considerable educational attainments, of families that are stable and successful—unabashed models of what American families are supposed to be—and of children who work and study hard, do well, and succeed. In historical context, the public's positive attitude toward Asian Americans today is really quite astonishing, though perhaps no more remarkable than the actual performances of many young Asian Americans—in schools, in the workforce, and in families.[1]

Virtually unnoticed in all of the attention that has been paid recently are those Asian Americans from the Indian Subcontinent or having cultural and ethnic roots there. As often as not South Asians are not acknowledged as such,[2] attention going instead to the Japanese, Chinese, Koreans, Filipinos, and, most recently, the Vietnamese and others from mainland Southeast Asia. Yet South Asians have been in the thick of the immigration action for many decades. The earliest South Asians in this country arrived just after the turn of the century. The far more numerous and highly educated recent wave of South Asians has easily matched or bettered the other successful Asian ethnic groups, and with them South Asians have outstripped the mainstream white population. Thus we have the remarkable phenomenon of a large ethnic community, highly visible, highly successful, yet on the whole unnoted in public discourse.[3]

Surely one element of this invisibility is racial. A National Opinion Research Center (NORC) survey in 1978 (Taub, n.d.) revealed considerable uncertainty in the U.S. population over the proper racial attribution of Asian

---

[1] The positive media coverage is pervasive; examples include Lindsey (1982), McBee (1984), Doerner (1985), and Bell (1985). The images are widely reported in the Asian source societies as well (e.g.: *Newsweek*, Asia/Pacific Edition, 1987).

[2] We use the term "South Asian" to refer to people whose origins are on the Indian Subcontinent, including India, Pakistan, Bangladesh, Nepal, Sri Lanka, Bhutan, and Sikkim. No label is ideal, but this one emphasizes the origins of many South Asians outside the political entity of India; it is synonymous with "Indo-American," a term currently popular. The term "Asian Indian" refers herein to persons whose origins are in the political entity of India, though this term is also ambiguous, given the political history of the region.

[3] South Asians are nowhere mentioned in any of the articles cited in footnote 1. A good deal of scholarly attention, however, has focused on the earlier discrimination toward Asian Americans, including South Asians. Studies of the contemporary South Asian community have usually considered a single metropolitan area; see Fisher (1980) and Saran (1985) for studies of New York City, for example. For a recent, useful bibliography, classified and annotated, see Singh (1988).

Indians. Eleven percent of the respondents saw Asian Indians as "white," another 15 percent as "black," 23 percent as "brown," 38 percent as "other." Thirteen percent said they did not know how to classify them.[4] Another source of this invisibility is the virtual absence of the kind of poverty that is usually associated with immigrants.

Asian Americans, including South Asians, offer a valuable perspective on American society, in particular because their experience seems to challenge some prevailing views about social opportunity and ethnic relations in the United States. The image of how America absorbs its immigrants has been built up and then cast aside in a continuing history of reconsideration and revision. Most dramatic, surely, has been the reification and then vilification of the idea of America as a "melting pot," as a social and cultural porridge. The contrary view takes ethnic identity and pride as enduring, powerful, and positive forces in the society. Another commonly held notion claims a pernicious role for ethnic stratification in America. Economic and racial hierarchies are maintained and kept congruent, it is said, through institutionalized discrimination of various kinds. Certainly the experience of many blacks, Hispanics, and other groups lends support to these ideas. Yet much (though by no means all) of the Asian American experience would seem to support another model of America, as ethnically and economically open.

Much can be learned about these important issues through an examination of the South Asian experience in America. Most South Asians are well prepared for economic life in America. More so than many other communities, they have the necessary language skills and formal schooling. But in cultural terms they offer about as severe a test as a Western society is likely ever to encounter. To the familiar American triad of Protestant, Catholic, and Jew are now added Hindu, Sikh, Muslim, and Buddhist. And to the familiar black versus white dichotomy so central to the American social world must somehow be incorporated a category of dark-skinned Caucasians. South Asians are more distinct culturally than their degree of economic assimilation and economic achievement would suggest. Statistically (with respect to incomes, for example), they resemble native-born Americans more than other immigrants do, yet they are less like Americans than most immigrants with respect to culture and social behavior, particularly in the realms of religion and family organization.

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[4] These responses were to question 77x in NORC Survey 4269. The question was, "Would you classify most people from India as being white, black, or something else?" The same survey revealed a broadly favorable view of India as a country, though an exaggerated view of India's level of poverty. The attitudes of Americans toward Indians as individuals seem to be shaped by the fact that a remarkable 53 percent of respondents claimed to have had personal contact with Indians. Furthermore, this personal contact was associated with favorable sentiments.

Having begun with some rather sweeping generalizations, we must now insert a caution regarding the great diversity that exists within the South Asian community, a diversity that belies easy generalization. Several discontinuities stand out. First is the notable discontinuity between the first and second (post-World War II) "waves" of South Asian immigrants. A further discontinuity is emerging between those who arrived in the late 1960s and early 1970s and those arriving since the late 1970s. A comparative observation will put these discontinuities into focus. The South Asian, Chinese, and Filipino immigrant experiences have been similar in that their first waves consisted disproportionately of men, most of whom had rural and agricultural origins. None of these groups at first produced families or descendants in significant numbers. In all three communities, however, the second and much larger wave was educated and urban in background, and the most recent immigrants have been drawn from a broader social and economic spectrum of the respective sending societies.

However, the South Asian community is further divided in complex ways. The first wave was largely Sikh and Punjabi, whereas the newer immigrants are mainly Hindu and drawn from all over India. Significant generational differences are also apparent. Hansen's Law (roughly, that what the grandfather seeks to forget the grandson seeks to remember; or, the first generation worries about survival, the second about assimilation, the third about roots) is nicely borne out among South Asians, among whom the first American-born generation is largely adapting to the modern American lifestyle. The generation gap within families is very great among South Asians. Many in the parental generation (today's adults) were married according to tradition in India before leaving for the United States or returned to India at some point to obtain a spouse. But their children do not share their traditional values regarding spouse selection, dating, and marriage. As this second generation is still in its schooling phase, it is a matter of interested speculation among older South Asians how these young people will behave when they become parents themselves. Historical and cultural divisions are also emerging within the South Asian community. A diversity of loyalties seems to be growing as a function of group size and the maturing of the migration stream. The initial migrants describe themselves as loyal to "India" and close-knit, perhaps of necessity. Now that South Asians constitute a large group in the United States, they recognize among themselves a proliferation of language, caste, sect, and other distinctions.

There is much to be learned from studying such a vibrant, diverse, and successful community. The first step toward understanding what the South Asian experience has to teach us about U.S. society lies in developing a better understanding of the South Asian population itself. This study is directed to that seemingly straightforward task.

SOURCES AND METHODS

Until recently there has not been a source of statistical materials on South Asians that was both national in scope and reasonably reliable. The 1980 census provides such a resource, offering a static profile, a snapshot portrait of numbers and composition. But many of the issues of greatest interest—migrant adjustment, assimilation, mobility—are processes that take place in time and throughout lifetimes; the census data shed little light on them. This shortcoming, inherent in any census or survey, is counterbalanced to a degree in the 1980 census by a wealth of detail on basic social and economic characteristics in a population never described in national statistics heretofore. Similar statistical materials from the 1990 census will provide a more dynamic view, with the 1980 situation as a baseline for comparison.

Meanwhile, however, we are limited to the 1980 census data. Our approach to using these materials will become apparent as the exposition develops, but the following points may be helpful to readers unfamiliar with census data. The census gives us the age, gender, and other compositional features—the demographics—of the population; and for various subgroups we can examine important social and economic characteristics. We focus here on three personal characteristics: age, gender, and immigrant status (country of birth and, for immigrants, time period of immigration). Throughout the paper we seek to clarify the analysis by making comparisons among the subgroups within the South Asian population (for example, by country of birth or year of immigration) and with other ethnic groups, both other Asian American groups and Whites, Blacks, and Hispanics.[5]

We draw upon published reports of the U.S. Bureau of the Census; but as those are rather thin for ethnic groups other than the White, Black, and Hispanic, we also use tabulations and data files prepared for us by the Census Bureau in connection with a larger project to examine the Asian American and Pacific Islander population of the United States. The tabulations are:

- Public Use Micro Sample (PUMS) files (see USBC 1982 for details): Tabulations for Whites, Blacks, and Hispanics were derived from the PUMS 1 percent sample tape (A and B samples combined). Tabulations for Asian

---

[5] The census provides information primarily on categories of "Race," one of which is "Asian Indian." In this paper we use the term *Race* (capitalized) only when reporting results based on the census classification by Race. Otherwise we use such terms as "ethnic group" and "ethnicity" to denote cultural background or "roots." Capitalization of the word "Race" serves as a reminder that a census concept and nothing more is implied. When capitalized, "Ancestry," "Place of Birth," and "Language" refer to the census classifications. Similarly, the terms "White" and "Black" are capitalized when they refer to the census classifications.

Americans were derived from the PUMS 5 percent sample tape. Both these sources are identified herein as PUMS.

- PUMS subsamples: Microcomputer tabulations were based on subsamples drawn from the PUMS files so as to result in approximately 2,000 cases per Race. This source is identified herein as PUMS-S.
- A complete count file (CCAA) of Asian Americans, including persons qualifying as Asian American by any one or combination of the four available criteria: Race, Ancestry, Place of Birth, and Language (all defined subsequently), and any persons not Asian American but living in a household containing one or more Asian Americans. Tabulations from this file were run for us at the Bureau of the Census under the supervision of Michael Levin. The tabulations available to us from this complete count file are: a basic set of socioeconomic tabulations (CCAA-1); a full cross-tabulation of Race by Ancestry by Place of Birth by Language (CCAA-2); a tabulation of the socioeconomic characteristics of the foreign born, by country of birth (CCAA-3); and a tabulation of detailed information on Ancestry (CCAA-4).
- Tabulations of ethnicity indicators in the November 1979 Current Population Survey (CPS79-1).

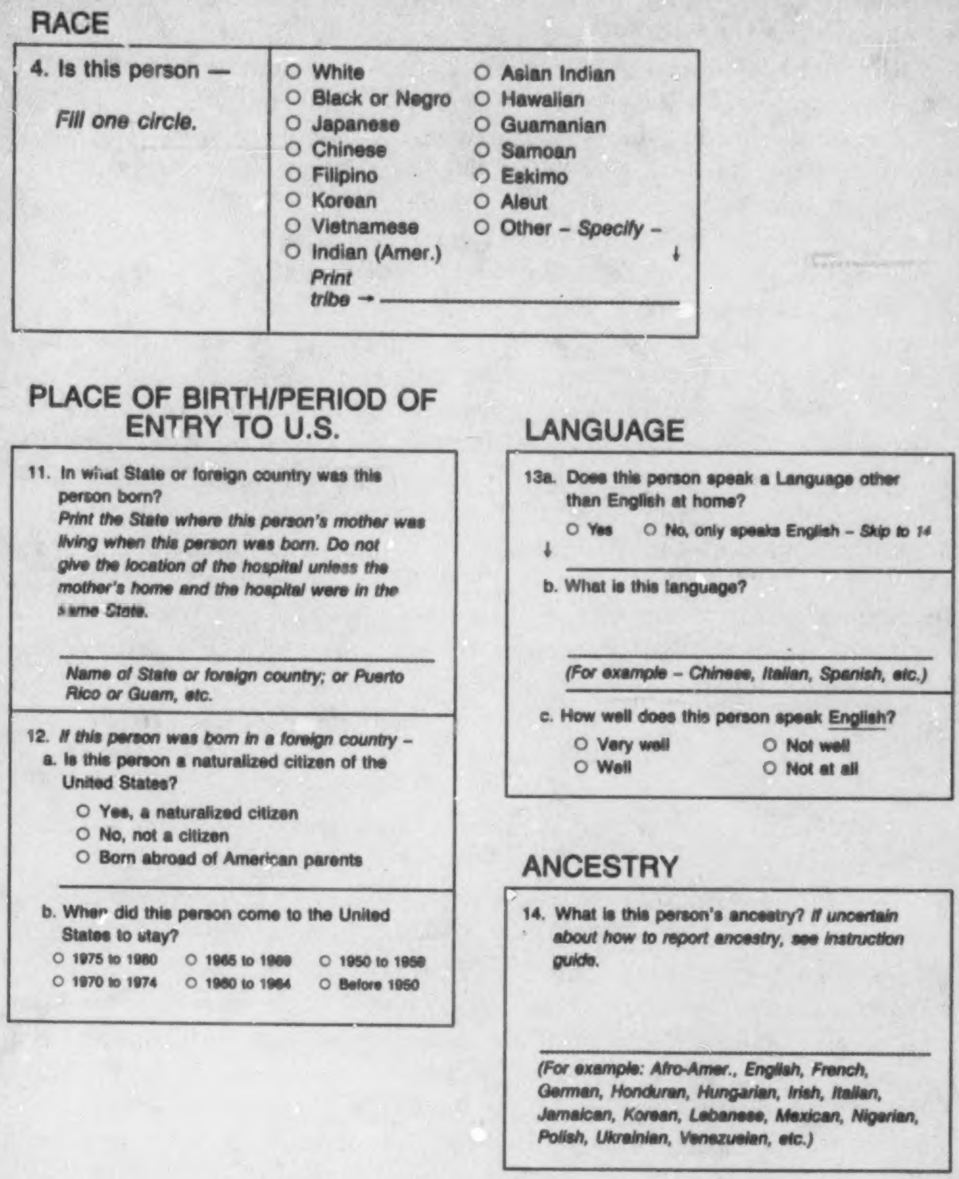
A STATISTICAL TAXONOMY OF "SOUTH ASIANS" AND "ASIAN INDIANS"

Four questions in the 1980 census served to identify ethnicity. The questions asked about Race, Place of Birth and Period of Entry into the United States, Language, and Ancestry (Exhibit 1).

To obtain the Race of a respondent the questionnaire asked, "Is this person–," and listed 14 "Races," including Asian Indian. Also permitted were write-in responses under "Other-specify." According to the Census Bureau, this familiar "self-identification" item is "not intended to provide any clear-cut scientific definitions of biological stock" (USBC 1982:10). (In 1970 Asian Indians were counted among the White population whereas the remaining Asians other than Japanese, Chinese, Filipinos, and Koreans were counted as "Other.") The responses to the ethnicity questions generated the following statistics on South Asians:

Asian Indian	387,223
Pakistani	15,792
Bangladeshi	1,314
Sri Lankan	2,923
Total	407,252

Exhibit 1. The 1980 census questions on ethnicity



RACE

4. Is this person —

Fill one circle.

- ○ White
- ○ Black or Negro
- ○ Japanese
- ○ Chinese
- ○ Filipino
- ○ Korean
- ○ Vietnamese
- ○ Indian (Amer.)
  Print tribe → ____________
- ○ Asian Indian
- ○ Hawaiian
- ○ Guamanian
- ○ Samoan
- ○ Eskimo
- ○ Aleut
- ○ Other – *Specify* – ↓

PLACE OF BIRTH/PERIOD OF ENTRY TO U.S.

11. In what State or foreign country was this person born?
Print the State where this person's mother was living when this person was born. Do not give the location of the hospital unless the mother's home and the hospital were in the same State.

____
Name of State or foreign country; or Puerto Rico or Guam, etc.

12. *If this person was born in a foreign country –*
a. Is this person a naturalized citizen of the United States?

- ○ Yes, a naturalized citizen
- ○ No, not a citizen
- ○ Born abroad of American parents

b. When did this person come to the United States to stay?

○ 1975 to 1980	○ 1965 to 1969	○ 1950 to 1959
○ 1970 to 1974	○ 1960 to 1964	○ Before 1950

LANGUAGE

13a. Does this person speak a Language other than English at home?
○ Yes ○ No, only speaks English – *Skip to 14*
↓
b. What is this language?

____
(For example – Chinese, Italian, Spanish, etc.)

c. How well does this person speak English?

○ Very well	○ Not well
○ Well	○ Not at all

ANCESTRY

14. What is this person's ancestry? *If uncertain about how to report ancestry, see instruction guide.*

____
(For example: Afro-Amer., English, French, German, Honduran, Hungarian, Irish, Italian, Jamaican, Korean, Lebanese, Mexican, Nigerian, Polish, Ukrainian, Venezuelan, etc.)

Source: 1980 census questionnaire.

In addition to the more than 407 thousand persons who identified themselves as ethnically South Asian, 12,897 respondents identified themselves or household members as "Asian," not specifying details. Some of those persons may also have been of South Asian origin, particularly the 4,430 among them who reported a South Asian location as their Place of Birth.

Ancestry was a new item in the 1980 census, intended to capture subjective affiliations. It replaced an item that for many decades had been used to elicit information on the birthplaces of parents, which analysts could combine with a person's Place of Birth to identify a category of respondent known as "foreign stock,"—that is, persons with at least one parent born abroad though they themselves were born in the United States. In contrast, Ancestry might refer to a connection three or more generations into the past. Because respondents were permitted to list multiple Ancestries, the Ancestry item was a less precise measurement of ethnicity than was the Race item, but arguably more appropriate as an assessment of ethnic affiliation or "roots." Although useful, it would have been more useful if it had been augmented by the item on parents' birthplaces so that the "foreign stock" of Asian Indians in 1980 could have been compared with that of other immigrant groups of the past.

Only two of the recorded Ancestry responses were relevant to identifying South Asians:

Asian Indian	311,786
Pakistani	25,963
Total	337,749

In addition, an unknown number of the 105,682 persons claiming "Other Asian" Ancestry were likely to be South Asian, perhaps 14,000 or so, producing an estimated total of 351,000 South Asians by Ancestry.[6]

In contrast to the Race and Ancestry information, responses to the Place of Birth and Language questions are likely to minimize the size of any ethnic group if used alone because they often will exclude the native-born. Combined with the other questions, however, they provide useful information. In the 1980 census the following numbers of persons reported a South Asian Place of Birth:

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6. Among those of "Other Asian" Ancestry, 12,847 reported Asian Indian or Pakistani as their Race. India or Pakistan was reported as Place of Birth by 6,643. The sum of these numbers, less the 5,570 who were counted in both groups, yields an estimate of 13,920. The use at home of South Asian languages was reported by 9,860 of those with Other Asian Ancestry, but those persons are likely to have been counted among those who classified themselves as Asian Indian by Race or Place of Birth.

Born in India	206,087
Born in Pakistan	30,716
Born elsewhere in South Asia	139,013
Total	375,685

There is of course considerable room for error in these numbers, given political changes in South Asia. (Whether one reported Pakistan or India as Place of Birth depended in part on when one had been born.) Moreover, statistical sources differ in their geographic definitions of South Asia.[7]

Among persons of Asian Ancestries who reported using the numerically most important South Asian languages in their homes, only 3.8 percent were neither Asian Indian nor Pakistani by Ancestry (Table 1). The figures in Table 1 exclude persons of non-Asian Ancestries who spoke a South Asian language at home.

In the analysis that follows it will be generally necessary to consider the census materials for "Asian Indians" in isolation, since only Asian Indians are shown separately in most published tabulations. Fortunately, Asian Indians make up a very large proportion of the South Asian total. We use the label "Asian Indian" henceforth, but the reader should bear in mind that this is an artificial census category and not a meaningful racial, ethnic, or ancestral designation.

The total number of persons reported as Asian Indians in the 1980 census varied according to the questionnaire item eliciting the Asian Indian label:

Race	387,223
Ancestry	311,786
Language	243,402
Place of Birth	206,087

The existence of these four rather different statistical criteria for Asian Indian status affords an opportunity to explore the interrelationships among them. Our purpose in doing so is not primarily taxonomic, but rather to explore the variegated nature of affiliation to the Asian Indian ethnic category and to decipher in what respect "ethnicity" may be the proper label to use at all.

The four questions produced a revealing pattern of responses, diagrammed in Figure 1. The number of persons claiming Asian Indian "ethnicity" according to at least one of the four criteria was 476,355, 23 percent

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[7] For example, in our source CCAA-3 South Asia seems to include Afghanistan and Iran, and South Asians born outside Asia but not in the United States are excluded from that source.

Table 1. Persons reporting use at home of a South Asian language, by Asian Ancestry: 1980 U.S. census

	Ancestry							
	All Asian Ancestries		Asian Indian		Pakistani		Other Asian	
Language[a]	No.	%	No.	%	No.	%	No.	%
Hindi	107,573	57.7	89,823	55.4	13,512	78.9	4,238	59.3
Bengali	11,271	6.0	10,877	6.7	74	.4	320	4.5
Punjabi	17,008	9.1	13,145	8.1	3,414	19.9	449	6.3
Gujarati	31,547	16.9	30,589	18.9	82	.5	876	12.3
Malayalam	9,576	5.1	9,208	5.7	40	.2	328	4.6
Tamil	9,445	5.1	8,511	5.2	0	.0	934	13.1
Total	186,420	100.0	162,153	100.0	17,122	100.0	7,145	100.0

Source: CCAA-2.

a. Table includes only the most commonly mentioned languages. Other languages mentioned were Pashto (1,577), Kurdish (1,909), Balochi (112), Tadzhik (332), Ossete (135), Sanskrit (603), Hindi (129,968), Bengali (13,180), Punjabi (19,298), Marathi (6,305), Bihari (226), Rajasthani (439), Oriya (670), Bhili (27), Assamese (493), Kashmiri (264), Nepali (783), Sindhi (1,650), Maldivian (50), Sinhalese (3,205), Dravidian (138), Brahui (1,737), Gondi (128), Jelugu (9,503), Kannada (5,440), Malayalam (11,385), Tamil (10,597), Kurukh (82), Munda (127), and Burushaski (80). These numbers, which unlike those in the table itself include speakers with non-Asian Ancestries, raise the total using South Asian languages at home by 37.9 percent, to 257,063. Speakers of the major languages in Table 1 are increased by 18.6 percent when speakers of non-Asian Ancestries are included.

more than the number by any single criterion. The number who identified themselves as Asian Indian by all four criteria was only 134,078. Large numbers of people classified themselves as Asian Indian by Race, although they did not claim Asian Indian Ancestry nor qualify as Asian Indian on grounds of Language or Place of Birth. Similarly, the Race criterion failed to record as Asian Indian many who said they had been born in India or spoke an Asian Indian language at home.

Among U.S. ethnic groups large proportions claim an ethnicity by Ancestry even when they do not claim the ethnicity by any other criterion (Levin and Farley 1982:table 6). This is what one would expect. The Ancestry item is designed to identify a broader as well as a generationally deeper afffiliative bond. In a historical situation of immigration and assimilation, Ancestry can be a more enduring attribute than Race. It is ironic that Race, putatively the more factual and fixed attribute, undergoes a subjective revision, whereas Ancestry, by intention the more subjective measure, does not. We are not surprised, therefore, that vast numbers of people identify themselves as Irish or German or French by Ancestry but by no other criterion.

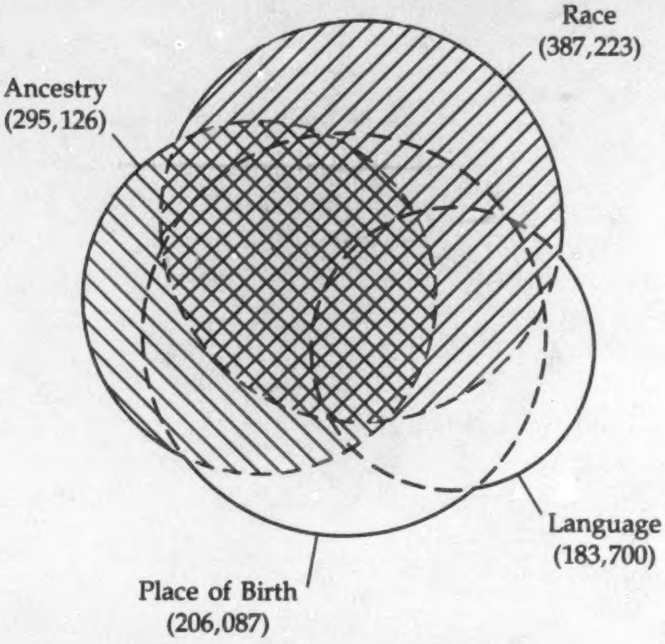

Figure 1. Relationships among the four 1980 census criteria for identifying Asian Indians

Source: U.S. Bureau of the Census, unpublished tabulations from the 1980 census.

But we are surprised to find that among Asian Indians precisely the reverse is the case: many who identified themselves as Asian Indian by Race in the census did not claim to be Asian Indian by Ancestry (Table 2). One-fourth of them claimed "American" Ancestry. Of those who claimed Asian Indian Ancestry but not Race, 44 percent reported multiple ancestry, in nearly all cases non-Asian. Both these results seem to indicate a process of identification with American society and perhaps of intermarriage as well.

We also observe in Table 2 that nearly all those Asian Indian by Ancestry but not by Race had been born outside India. This interesting result is illuminated by another census tabulation (CCAA-4), which indicates that some one-third were born in the United States and two-thirds were born elsewhere. Those born elsewhere are further classified by Place of Birth as follows:

South Asia other than India	31.2%
Southeast Asia	15.6%
East Asia	3.2%
Outside Asia	50.0%

Table 2. Number and percentage distribution of Asian Indians, by criteria for Asian Indian designation: 1980 U.S. census

Criterion	Number	Percentage distribution		
Race	387,223			
Ancestry	311,786			
Race and Ancestry	260,496			
Race but not Ancestry	126,727	100.0		
Ancestry = American	32,705	25.8		
Ancestry = Not stated	4,304	3.4		
Ancestry = All others	89,718	70.8		
Ancestry but not Race	51,290	100.0		
Born outside India	46,558	90.8	100.0	
Single Ancestry	22,626		48.6	
Multiple Ancestries	23,932		51.4	100.0
Variant on Asian Indian	36			0.1
Other Asian	1,569			6.6
Not Asian	22,327			93.3
Born in India	4,732	9.2		

Source: CCAA-2.

The tabulation also establishes that nearly all of those persons reported using English in their homes. We can take the analysis no further with the data available, but the image coming into view is one of Asian Indians, at least those who had by 1980 found themselves in the United States, living throughout the world and retaining their sense of Asian Indian ethnicity though not of Race. Many of those who reported themselves to be Asian Indian by Ancestry but not by Race came to the United States indirectly, via other Asian countries and from elsewhere in the world.[8]

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[8] For more on this global dimension of South Asian emigration see Tinker (1977). Jain (1982) and Madhavan (1985) provide rough estimates of the size of Asian Indian communities in other countries. According to Madhavan (1985:table 1), about 13.5 million persons of Indian origin were living outside India in 1981. The U.S. share was small, but the size of the U.S. Asian Indian community was approximated or exceeded only in India's historical destination areas, nearby countries (Burma, Malaysia, Mauritius, Nepal, Singapore, and Sri Lanka) and those farther away (Fiji, Guyana, South Africa, and Trinidad and Tobago). Among the more recent destinations were Canada, Saudi Arabia, the United Arab Emirates, the United Kingdom, and the United States. The largest of these newer communities were in the United Kingdom and the United States—accounting for 500 thousand and 410 thousand persons, respectively, in Madhavan's data.

Supplementary evidence comes from the November 1979 round of the Current Population Survey, conducted by the U.S. Census Bureau. In that round all of the measures of ethnicity used in the census, including Ancestry and Parents' Birthplaces, were used to afford comparisons among them (Levin and Farley 1982; McKenney, Farley, and Levin 1983). The data suggest some disagreement between the concepts of Ancestry and "foreign stock"; 24.1 percent of those claiming Asian Indian Ancestry also reported themselves not to be Asian Indian by either their own or their parents' Birthplaces. Still, 95.6 percent of those Asian Indian by Ancestry were also Asian Indian by at least one other criterion, suggesting that nearly all claims to Asian Indian status are well founded in one respect or another.[9]

The additional information elicited by the census question on Ancestry concerns third and subsequent generations. McKenney et al. (1983) report that 57.5 percent of the Asian Indians were first-generation (i.e., they had been born abroad), 16.6 percent were second-generation (one or both parents had been born abroad), and 24.1 percent were third-generation (neither parent born abroad). Data for other ethnic groups indicates that the third-generation percentage tends to be low for recently arrived groups (e.g., for the Vietnamese it was 2.3 percent) and high for groups who have been in the United States for longer periods (e.g., it was 39.5 percent for the Japanese and 18.9 percent for Filipinos). But the Asian Indian figure was unexpectedly high, implying that a substantial proportion had arrived some time in the past. In addition, among the third generation of Asian Indians nearly half (46.6 percent) had multiple ancestries. As we will see subsequently, the 1980 census includes a surprising number of third-generation Asian Indians, many of older ages and female. We explore this result further below.

Putting aside the implications of these data for clarifying the meanings of such terms as race, ancestry, and ethnicity for the Asian Indian population, we are left with the fact that efforts to fine-tune estimates of numbers of South Asians or Asian Indians are largely futile because both the concepts and their measurement are elusive. A related implication is that projections of the future Asian Indian population are "soft" at best. As to the deeper implications for personal identity and group membership, to unravel them will require another kind of investigation altogether.

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[9] Levin and Farley (1982) report the following percentages agreeing with the Ancestry response: birthplace, 57.5; father's birthplace, 75.0; mother's birthplace, 72.3; current language in the home, 60.0; mother tongue, 53.7. The case base for these distributions is 182.

ASIAN INDIAN DEMOGRAPHY

We use the term demography in this paper to refer broadly to the features of a population that stand as significant markers of its social, economic, and cultural character as a community relative to other communities or the national population as a whole. This paper is concerned in its entirety with the demography of Asian Indians—with their educational attainments and occupational specializations and incomes and geographic distribution and the like. We begin by considering the core demographic features that underlie population change: growth of the Asian Indian population in total numbers, numbers by age and gender, and numbers by place of birth and duration of residence in the United States. We discuss these features using a set of diagrams—age and sex pyramids—that contrast Asian Indians with other Asian American communities and with the whole of the U.S. population. This information stands as a cross-sectional map of the Asian Indian community in 1980, delimiting some of the major subgroups within it at that time. The data can also be read more dynamically, as a reflection of the history of Asian Indian settlement.

The Remarkable Growth in Numbers

In the first half of the twentieth century immigration from South Asia was limited to the several thousand people who arrived prior to the informal restrictions that applied after 1907. Those earliest immigrants came mainly from the Punjab; nearly all were from rural and agricultural backgrounds, and many were of the Sikh religion (Jacoby 1956; La Brack 1980; Chandrasekhar 1982; Minocha 1987). The very restrictive immigration legislation of 1917 defined a "Pacific Barred Zone" and effectively ended South Asian immigration until 1946, when a small quota was alloted to South Asians. Only 7,629 immigrants from South Asia are recorded as having arrived over the entire postwar period prior to 1965 (Table 3). But in the 15 years between the legal changes of 1965 and the 1980 census the annual number of immigrants from South Asia grew from fewer than three thousand to nearly 30 thousand, and that figure has been approximated in each year since 1980. Some 221 thousand South Asian immigrants were recorded in the period from 1965 through 1979. Nearly all came from India or Pakistan (82 percent from India alone), and a high proportion of the total from both countries immigrated under the 20,000-person quotas provided to those nations by the 1965 law.[10]

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[10] The substantial immigration to the United States in the 1960s and 1970s was but a small proportion of total emigrants from India during those two decades, estimated at about 4.5 million. (The figure is derived from Madhavan 1985:table 2, using midpoints of the ranges given.)

Table 3. South Asian immigrants to the United States: 1946–84

Year of immigration	Total Asia	Total South Asia	India	Pakistan	Bangladesh	Sri Lanka	Nepal	Bhutan
1946–64	238,750	7,629	6,319	1,310[a]				
1965	17,080	769	582	187				
1966	35,807	2,805	2,458	34				
1967	53,403	5,288	4,642	646				
1968	50,841	5,355	4,682	673				
1969	65,111	6,814	5,963	851				
1970	83,468	11,884	10,114	1,528		242		
1971	92,165	16,667	14,317	2,125		180	40	5
1972	108,208	19,755	16,929	2,480		306	39	1
1973	111,927	16,309	13,128	2,525	154	455	46	1
1974	117,023	15,936	12,795	2,570	147	379	43	2
1975	118,952	19,297	15,785	2,620	404	432	56	0
1976	133,486	21,455	17,500	2,888	590	411	59	7
1977[b]	172,823	28,478	23,208	3,931	762	475	89	13
1978	232,141	25,811	20,772	3,876	716	375	68	4
1979	170,851	24,721	19,717	3,967	549	397	79	12
1980	217,353	27,912	22,607	4,265	532	397	98	13
1981	244,075	28,105	21,522	5,288	756	448	83	8
1982	293,872	27,529	21,738	4,536	639	505	97	14
1983	265,918	31,632	25,451	4,807	787	472	105	10
1984	239,722	31,925	24,964	5,509	823	554	74	0

Sources: INS data taken from Minocha (1987:table 15.1).

Note: A blank cell means that information is not available for that country of origin and year.

a. Data for 1954–64 only.

b. Data for 1977 include the transition quarter (1 July 1976 to 30 September 1976) and therefore cover the 15 months ending on 30 September 1977.

Thus, the United States has been receiving large numbers of South Asians for nearly two decades. Unknown numbers have returned to South Asia.[11] Those who settled and their offspring combined to number around 400 thousand in the census of 1980. This magnitude is striking when one considers how little notice has been paid to the growth of the Asian Indian community. One reason for the little notice is the more rapid growth of several other Asian American populations over the same period (Table 4). By 1980 the Japanese, Chinese, and Filipino communities each numbered between 716 and 812 thousand, and the Koreans and Vietnamese had emerged as large communities as well. Despite its rapid expansion, the Asian Indian population constituted only 11.2 percent of the Asian American total in 1980, though it was the fourth largest Asian American community, just larger than that of the Koreans.

It is beyond the scope of this paper to examine immigration statistics in detail (see Minocha 1987 and Arnold, Minocha, and Fawcett 1987 for good reviews on which the following discussion draws), but two observations bear upon our discussion of the situation in 1980. First, we note the pattern of family-based immigration. Immigrant preference categories have shifted from nonpreference and occupational preference to family reunification, and within the family unification categories from spouses and children toward brothers and sisters. The prevalence of families in the immigration stream recently has served to give the stream a demographically more "normal" gender composition—it has gone from 60 percent male in 1970 to about 50 percent male in 1984—and has created the basis for a vibrant and viable community of Asian Indian families. Second, we note that the socioeconomic, and particularly the occupational, selectivity, which was once very strong (86 percent of those with occupations having reported professional, technical, or kindred occupations in 1965–69) has been weakened considerably as immigrants increasingly qualify as relatives of citizens rather than as engineers or doctors. In 1983–84 only 45 percent of immigrants from India had professional backgrounds. This change has implications for the internal heterogeneity and economic level of the Asian Indian community.

Since 1980 the Asian Indian community has continued to grow rapidly. According to one estimate based on recent immigration figures and assessments of changes due to births and deaths (Gardner, Robey, and Smith 1985:table 1), the Asian Indian population grew by some 37 percent to 526

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[11] Over the period of 1908–57 the number of recorded entrants (8,117) exceeded only slightly the numbers of those who left according to unpublished data from the Immigration and Naturalization Service. These figures correspond with estimates by Davis (1951) that, worldwide over the period between 1834 and 1937, some 30.2 million people left India but 23.9 million returned.

Table 4. Growth of the Asian American communities: 1900–80 U.S. censuses
(Numbers at census dates, in thousands)

Census year	Total U.S.	Total Asian	Japanese	Chinese	Filipino[a]	Korea	Asian Indian[b]	Vietnamese
1900	76,212	204[c]	86	119	—	—	—	—
1910	92,229	250[c]	153	94	3	5	3	—
1920	106,022	332[c]	221	85	27	6	2	—
1930	123,203	489[c]	279	102	108	8	3	—
1940	132,165	490[c]	285	106	99	9	2	—
1950	151,326	599c	326	150	123	7[d]	—	—
1960	179,323	878c	464	237	176	—	—	—
1970	203,212	1,430c	591	436	343	69[e]	—	—
1980	226,546	3,466	716	812	782	355	387	245

Sources: USBC (1983a:table 40) and various census volumes for the years shown.

a. Included with "other Races" for the United States in 1900 and for Alaska in 1920 and 1950.

b. Precise Asian Indian census totals are: 1910 (2,546), 1920 (2,495), 1930 (3,130), 1940 (2,405), 1980 (387,223).

c. Total only of Asian groups listed for particular year.

d. Data for Hawaii only.

e. Excludes Koreans in Alaska.

thousand in the period 1980–85. Remarkably, many other Asian American groups are estimated to have expanded even faster, so that by 1985 Asian Indians were only the sixth largest group, representing only 10.2 percent of all Asian Americans. The Vietnamese and Koreans had surged ahead with exceptional in-migration.

It is likely that Asian Americans as a whole and Asian Indians among them will experience continued remarkable growth in the foreseeable future. The projections summarized in Table 5 suggest the presence of one million Asian Indians by the year 2000 and nearly two million 30 years thereafter. These results can hardly be precise in light of the assumptions that were necessary and the problems with arriving at an appropriate figure for 1980, but it is clear that considerable expansion of the Asian Indian population is in store.

Demographic Structure in 1980

One of the striking facts about the Asian American population is its enormous diversity. Heterogeneity is apparent within each of the ethnic groups as well as among them. Divergent histories of migration are evident from even the crude measurement categories used in the census: age groups, gender, country of birth, year of immigration. From Figure 2, for example, it can be seen that the Japanese, with a large population of early immigrants, are now mainly in the middle and older age groups and mostly native-born today (there were relatively few Japanese immigrants during the 1970s). In

Table 5. Projections of the future Asian American population, by Race: 2000 and 2030
(All numbers in thousands)

	Year		
	Estimated population	Projected population	
Race	1980	2000	2030
All Asian Americans	3,466	9,850	19,935
Chinese	812	1,684	2,779
Filipino	782	2,071	3,964
Japanese	716	857	946
Asian Indian	387	1,006	1,919
Korean	357	1,321	2,947
Vietnamese	245	1,574	3,935
Other Asian	166	1,338	3,445

Source: Bouvier and Agresta (1987).

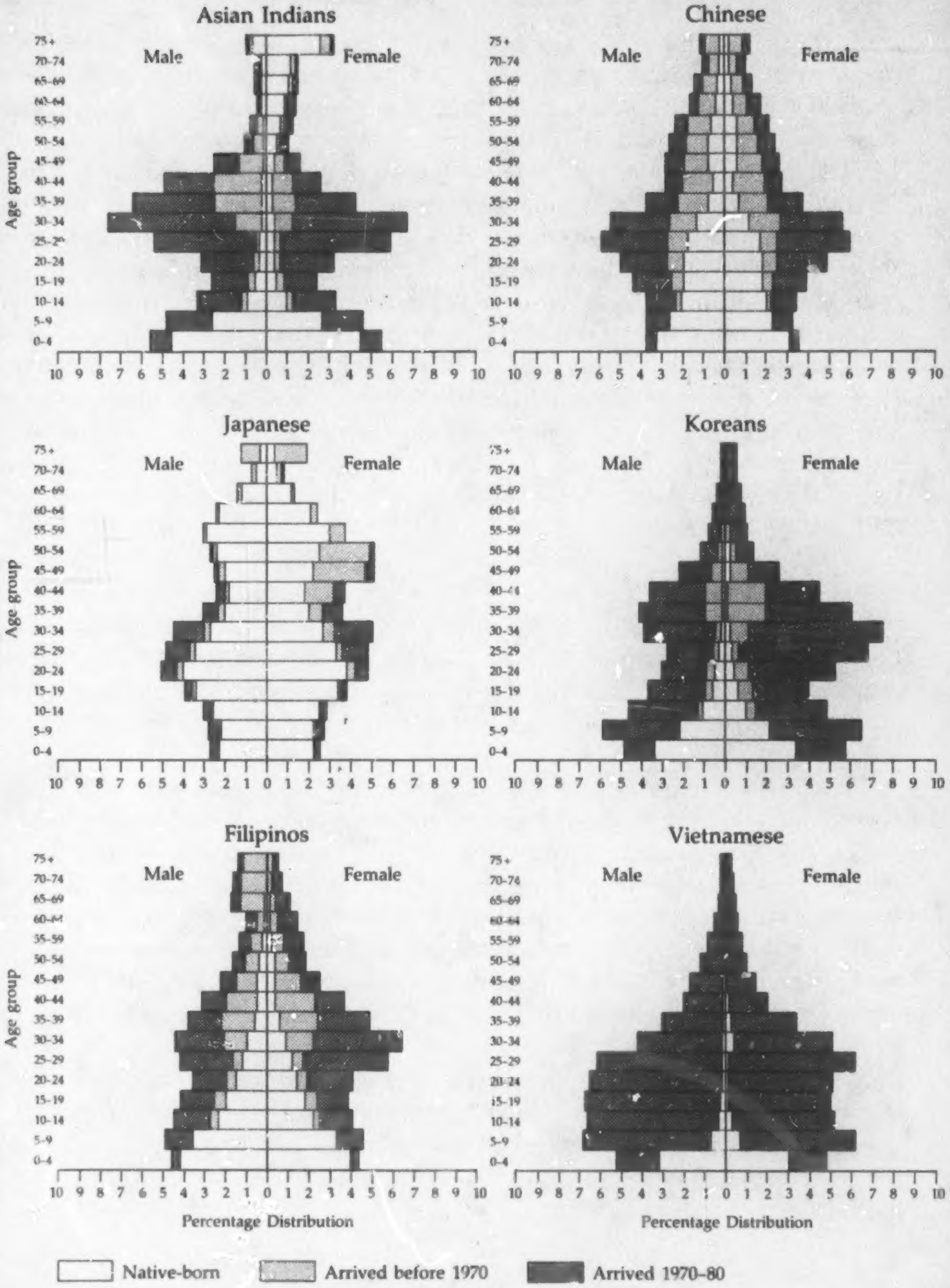

Figure 2. Age and sex distributions of Asian American racial groups, by Place of Birth and period of immigration

Source: U.S. Bureau of the Census, unpublished tabulations from the 1980 census.

contrast, the Vietnamese are mostly recent immigrants; among them few (mostly the young) are native-born. Asian Indians are much more like the Vietnamese than the Japanese in their demographic structure but much more akin to the Japanese in their socioeconomic characteristics.

The age composition of the Asian Indian population is remarkably concentrated (72 percent) in the middle ages, 15–44. The low share of young people (15.2 percent) results from a low level of childbearing and the immigration primarily of adults without children. (Other recent immigrations, especially of Koreans and Vietnamese, have included many families with children.) The low share of Asian Indians above age 65 (12.8 percent) results from the recency of immigration by this group and the scarcity of older persons among the immigrants. The implications of this highly concentrated age distribution become evident when we consider the demographic changes in store in the coming decades. The concentration in adult ages means that within Asian Indian households the ratio of consumers to potential earners is relatively low.

The age–sex pyramid for Asian Indians reveals suprisingly large percentages of older (age 60 or older) native-born women. We can find nothing in the early history of Asian Indian settlement that would explain the presence of these older native-born women in 1980, and therefore we have examined available data on the native-born population more closely in an effort to learn more about them and whether a census error may be involved.[12]

The 1980 census recorded 270,268 native-born Americans who were Asian Indian by one or another of the remaining three criteria of Race, Language, and Ancestry, and 17,785 native-born who were Asian Indian by Race but not Ancestry (Table 6). One possibility we have considered is that a misunderstanding led some American Indians to record themselves as Asian Indians by Race. American Indians (also called native Americans) are more likely to be disproportionately native-born, aged, and female. This type of error would also contribute to the high percentage of reported third-generation Asian Indians. But the women in question do not reside disproportionately in areas associated with American Indians. Consistant with the hypothesis, however, is the finding that, among those who reported being Asian Indian by Race only, the median age was high (44.2 years), the percentage 65 years old or older was also high (31.9 percent), and the median income was low ($13,900). (In contrast, for those who reported them-

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[12] Hess (1974) reports the arrival of 6,000 Asian Indians in 1910, mainly Punjabi males who came to the United States via Canada. He refers to 3,130 Asian Indian immigrants in 1930 and 2,405 in 1940, figures that accord with those in Table 4. Jacoby (1956) indicates that only a few Asian Indian immigrants were female. Leonard (1985) suggests that a high percentage of the men were married but had left their spouses in India.

Table 6. Number and percentage distribution of native-born Asian Indians, by criteria for Asian Indian designation: 1980 U.S. census

Criterion	Number	Percentage distribution		
Any criterion	270,268	**100.0**		
Race	191,706		**100.0**	
Ancestry	143,613			**100.0**
Race and Ancestry	97,055		50.6	67.6
Race but not Ancestry	17,785			
Race only	83,195	30.8	49.4	
Ancestry but not Race	46,558			
Ancestry only	41,676	15.4		32.4
Language only	25,675	9.5		
Multiple criteria	119,722	44.3		

Source: CCAA-2.

selves Asian Indian by Ancestry but not Race the median age was 20.1, the percentage 65 years old or older was 3.1, and median income was $16,700.) Unfortunately, we cannot adduce more from these circumstantial bits of evidence and thus must leave the issue unresolved. But although we can neither rule out nor confirm error in the census, we believe the effect of such an error on the estimated total of Asian Indians would not be great.[13]

There is considerable diversity in the proportions of immigrants among the various ethnic groups of Asian Americans (Table 7). The proportions range from 28 percent among the Japanese (an old migration stream with little continuing in-migration) to 90.5 percent among the Vietnamese (a new migration stream with little pre-1970 migration and a small native-born population). Several Asian American groups consist of large proportions of native-born, recent migrants, and older migrant groups (for example, the Chinese and Filipinos). Asian Indians are predominantly immigrants (only the Koreans and Vietnamese are more so), and especially recent (since the 1970s) arrivals. If the Koreans, Vietnamese, and Asian Indians are distinguished from the other groups by their substantial shares of recent migrants, the Asian Indians are distinguished from the Koreans and Vietnamese by the concentration of their recent immigrants in the early adult ages (Figure

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[13] If all of the 6,492 persons of ages 65 and over who were classified as Asian Indian by Race only were actually American Indian, correcting the classification error would reduce the Asian Indian total by only 1.7 percent. The adjustment would, however, diminish considerably the excess of older Asian Indian women.

Table 7. The share of immigrants and recent immigrants, by Race: 1980 U.S. census

Race	Percentage of immigrants[a] among total population of race	Percentage of immigrants who arrived during 1970s	Percentage of recent immigrants[b] among total population of race
Japanese	28.4	47.5	13.5
Chinese	63.3	60.4	38.1
Filipino	64.7	64.1	41.5
Asian Indian	70.4	78.5	55.3
Korean	81.9	84.6	69.3
Vietnamese	90.5	98.1	88.8

Source: CCAA-1.

[a] An immigrant is defined as a foreign-born person of non-U.S. parents.

[b] A recent immigrant is defined as one who immigrated during the 1970s.

2). It is these early-adult men and women who make up the core of the new Asian Indian family life in the United States.

Turning to the geographic distribution of Asian Americans and Asian Indians in the United States, we encounter a recurrent theme: Asian Indians are in this respect much more like the U.S. population as a whole than they are like other Asian Americans. Whereas nearly two-thirds of Asian Americans were living in the West in 1980, more than half (57 percent) of Asian Indians were found in the Northeast and North Central regions; for the U.S. population as a whole, nearly half was living in the Northeast and North Central regions, and one-third was living in the West (Table 8).

More than Americans as a whole, Asian Indians were concentrated in a few metropolitan areas in a few states in 1980 (Table 9). Six states—

Table 8. Regional concentration of Asian Indians and Asian Americans: 1980 U.S. census

Region	Asian Indians	Total Asian Americans	Total United States
Total United States	100.0	100.0	100.0
Northeast	34.2	15.4	21.7
North Central	23.1	10.0	26.0
South	23.4	11.1	33.3
West	19.2	63.6	19.1

Source: USBC (1983b:table 1).

Table 9. Main urban concentrations of Asian Indians: 1980 U.S. census

State and urbanized area	Asian Indian population	
	City	State
California		59,774
Los Angeles-Long Beach	24,138	
San Francisco-Oakland	12,722	
4 additional urbanized areas	10,309	
Illinois		37,438
Chicago	32,242	
3 additional urbanized areas	1,044	
New Jersey		30,684
New York City	25,427	
Philadelphia	2,048	
2 additional urbanized areas	3,047	
New York		67,636
New York City	56,725	
5 additional urbanized areas	6,209	
Pennsylvania		17,230
Philadelphia	8,179	
Pittsburgh	3,196	
8 additional urbanized areas	2,785	
Texas		23,395
Houston	11,107	
Dallas-Ft. Worth	4,642	
8 additional urbanized areas	2,653	

Sources: USBC (1983b:table 1; 1983c:table 248).

California, New York, Illinois, New Jersey, Texas, and Pennsylvania—contained 236 thousand Asian Indians, or 61 percent of the total; those states and four others—Michigan, Maryland, Ohio, and Florida—accounted for 290 thousand, or 74.9 percent. No other states had more than 10,000 Asian Indians.

The concentration of Asian Indians in large cities is equally pronounced. Some 80 percent of California's Asian Indians were living in six urbanized areas in 1980; of those, 62 percent were living in the two largest metropolitan areas, Los Angeles-Long Beach and San Francisco-Oakland. Some 85 percent of New York State's Asian Indians were living in the New York City metropolitan area, and about the same percentage of Illinois's Asian Indians were living in the Chicago area. Many of the smaller Asian Indian communities in less urbanized states were even more concentrated in cities of those states. For example, virtually all of Colorado's 2,565 Asian Indians were living in urbanized areas. This urban orientation is not surprising, but it is often forgotten when comparisons of incomes and educational levels are made between Asian Indians and the general U.S. population. The relevant comparison, were such data available, would be with urban Americans rather than the U.S. population as a whole.

As we turn now to a discussion of schooling, work, and incomes, we should emphasize that the Asian Indian population in 1980 was in most respects aided by its demography. Disproportionately it was a population of young adults; and although many were immigrants, they were highly endowed with schooling and skilled in the English language.

HUMAN RESOURCES

How Asian Indians fare in the United States reflects at least in part the training and skills they bring to the American economy. Our discussion of human resources is necessarily brief because the census offers rather limited information on skills and training. It does, however, provide information on educational attainment and current enrollment in formal schooling. One further piece of census information of considerable relevance to immigrant communities is facility with the English language.

Overall, Asian American high school completion rates (Table 10) show dramatic progress over cohorts, a pattern shared with the American population as a whole. Unique to the Asian American ethnic groups, however, is a considerable initial educational advantage for males over females, a reminder of social conditions in the societies from which Asians have migrated to this country. Asian Indians share in these Asian American patterns. Although high school completion levels for females in the 45–54 age group were not the lowest among the groups shown in 1980, the deficit of female relative to male levels was the largest, approximated only by the Koreans and the Vietnamese.

For each of the Asian American groups the gender difference in schooling levels had been greatly reduced over time, however, as indicated in the last two columns of Table 10. In the case of Asian Indians the female deficit in the younger age group was only 5.6 percent, roughly equal to that of the other groups. Only the Koreans and Vietnamese continued to show a substantial difference in high school completion between males and females.

From Table 11, which presents high school completion rates for the same age groups by sex, distinguishing Asian Indians by country of birth and time period of immigration, we can see that younger immigrants with the longer durations in the United States had the highest rates of high school completion in 1980. Even older men who had arrived recently had an 80

Table 10. High school completion (in percentages), by Race and sex, for two age groups: 1980 U.S. census

Race	Males			Females			Difference between males and females	
	25–29	45–54	Difference	25–29	45–54	Difference	25–29	45–54
White	87.0	68.7	18.3	84.2	70.1	17.1	2.8	-1.4
Black	73.8	42.9	30.9	76.5	45.9	30.6	-2.7	-3.0
Japanese	96.4	88.1	8.3	96.3	82.5	13.8	0.1	5.6
Chinese	90.2	68.7	21.5	87.4	57.7	29.7	2.8	11.0
Filipino	88.8	79.6	9.2	85.0	71.3	13.7	3.8	8.3
Korean	93.5	90.4	3.1	79.0	68.5	10.5	14.5	21.9
Asian Indian	93.5	86.1	7.4	87.9	62.0	25.9	5.6	24.1
Vietnamese	75.5	63.6	11.9	63.4	41.4	22.0	12.1	22.2

Source: USBC (1984).

Table 11. High school completion (in percentages), by Place of Birth, period of immigration, and sex, for two age groups: All Asian Indians and foreign-born Asian Indians: 1980 U.S. census

Place of birth and period of immigration	Males			Females			Difference between males and females	
	25–29	45–54	Difference	25–29	45–54	Difference	25–29	45–54
All Asian Indians	93.5	86.1	7.4	87.9	62.0	25.9	5.6	24.1
Total foreign-born	94.4	91.2	3.2	90.4	69.5	20.9	4.0	21.7
Immigrated 1975–80	94.3	79.5	14.8	89.9	47.0	42.9	4.4	32.5
Immigrated 1970–74	95.2	91.8	3.4	90.8	68.6	22.2	4.4	23.2
Immigrated 1965–69	92.4	95.2	–2.8	94.5	87.9	3.4	–2.1	7.3
Immigrated before 1965	92.5	96.5	–4.0	100.0	88.1	11.9	–7.5	8.4

Source: CCAA-1.

percent completion rate; the female rates were also generally high, except among older women who had immigrated recently. Within the immigrant population the gender differential had dropped from a high level to reverse itself (now favoring women) among younger people, most of whom received their education in the United States.

The overall level of high school completion among Asian Indians has been so high that much of our subsequent discussion relates to college graduates, especially their occupational and income attainment. Relative to the American population as a whole, the Asian Indian college completion rate is very high (Table 12, row 1). Roughly two-thirds of males and half of the younger age group of females were college graduates in 1980. Only the older age group of women lagged. Asian Indian women without college degrees were mainly U.S.-born (row 2). There has been a general and dramatic reduction in the gender differentials in college completion; in 1980 the female level was low only among recently arrived older women, those whose school years were probably spent in India. Indeed, nearly all of the less educated of each sex were older, recent arrivals.

Perhaps the most elementary human resource in the context of American society and particularly the American labor market is the ability to communicate in the English language. We therefore examined census data on language abilities in a young adult age group, 18 through 24 years of age, for each of the Asian American groups. This age group finds itself at a critical stage with regard to continuation and success in school as well as successful labor market entrance.

In 1980 Asian Indians more than any other Asian American group had command of both English and a "native" language (Table 13). Only 26.9 percent spoke English alone. Six of ten spoke a native language, and of those 92 percent also spoke English well or very well. Only Filipinos had more widespread proficiency in English, and that is largely because so many of them were native-born Americans who spoke only English. In contrast, many Asian Indians spoke English in India. Among Asian Indians in the 18–24 age group who did not speak English well, 97.4 percent were foreign-born, and of those 85.3 percent had arrived in the preceding five-year period.

These patterns among the foreign-born can be examined more closely in Table 14, which shows for different age, sex, and immigrant subgroups the percentage having some problem speaking English. We make several observations here that will be pursued in subsequent discussion. First, the prevalence of English language difficulty in 1980 was very low among immigrants overall, though somewhat higher for women than for men (12.8 versus 4.8 percent). Second, the levels diminished with age and duration of experience in the United States in just the manner one would anticipate. Third, recently arrived young people of school age were an important exception. An important segment of this group had difficulty using English;

Table 12. Completion of four or more years of college (in percentages), by Place of Birth, period of immigration, and sex, for two age groups: All Asian Indians and foreign-born Asian Indians: 1980 U.S. census

Place of birth and period of immigration	Males			Females			Difference between males and females	
	25–29	45–54	Difference	25–29	45–54	Difference	25–29	45–54
All Asian Indians	65.4	66.8	-1.4	50.3	24.0	26.3	15.1	42.8
Total foreign-born	73.9	74.9	-1.3	57.9	69.5	-11.6	15.7	5.4
Immigrated 1975–80	73.9	49.7	24.2	61.1	17.7	43.4	12.8	32.0
Immigrated 1970–74	76.5	71.9	4.6	51.0	37.9	13.1	25.5	34.0
Immigrated 1965–69	54.1	87.4	-33.3	48.0	58.6	-10.6	6.1	28.8
Immigrated before 1965	54.1	87.4	-33.3	64.1	41.2	22.9	-10.0	46.2
United States total	23.6	19.7	3.9	20.5	10.5	10.0	3.1	9.2

Sources: CCAA-1; USBC (1984).

Table 13. Indicators of language ability among persons of ages 18–24, by Asian American group: 1980 U.S. census

Measure of English ability	Chinese	Filipino	Japanese	Asian Indian	Korean	Vietnamese
Percentage speaking only English	25.4	40.8	76.1	26.9	23.8	3.7
Percentage speaking a native language	70.9	55.1	22.4	59.7	73.3	84.7
Percentage speaking some other language	3.7	4.0	1.5	12.3	3.0	11.7
Percentage of native speakers speaking English well or very well	85.2	95.5	81.7	92.0	77.2	64.1

Source: CCAA-1, table 33.

Note: We lack information on some members of each group, as defined by Race, who spoke some language not regarded as "native" to the Race. Thus, 12.3 percent of the Asian Indians by Race spoke some language at home that was neither English nor an Asian Indian language. This level is rather high in comparison with the other Asian American communities. Our statements about language abilities pertain to persons of each Race who were speakers of English only or of some "native" language, alone or along with English. In many cases English language ability in this age group was reported by someone else in the household.

still, it is important to recognize how low these levels were relative to those of other immigrant groups. Fourth, recently arrived women had notable levels of difficulty with English, particularly women of ages 35 and over, among whom 42.0 percent had difficulties. In the absence of evidence we can only surmise that three groups are represented here: uneducated wives of educated husbands, women immigrating as household help, and mothers of recent immigrants.

OCCUPATIONS AND INCOMES

The broad occupational distributions of Whites, Blacks, and the other Asian American ethnic groups reveal a sharp contrast offered by Asian Indians. Whites present perhaps the most suitable basis of comparison for Asian Indians. At the same time they provide an approximate picture of the American population as a whole. The Black population reflects the American extreme in discriminatory treatment and other forces blocking occupational attainment. Table 15 is limited to the "white collar" occupational categories, where Asian Indians are heavily concentrated. Males and females are shown separately, since the forces acting on the two sexes in the realm of job attainment are quite different and yield markedly different results.

Table 14. Percentage speaking English "not well" or "not at all" among persons born in India, by sex, age, and period of immigration: 1980 U.S. census

Sex and age group[a]	Period of immigration			
	All immigrants	1975–80	1970–74	Before 1970
Males	4.8	8.8	2.2	1.5
5–13	14.1	19.8	4.61	0.0
14–17	4.8	8.9	2.4	0.0
18–24	7.6	9.6	3.3	0.8
25–29	4.5	5.3	1.7	10.2
30–34	2.3	3.9	1.4	0.6
35+	3.9	10.0	2.2	1.5
Females	12.8	19.2	7.5	5.0
5–13	10.0	14.6	3.4	5.4
14–17	6.0	13.4	0.8	0.0
18–24	12.1	14.5	5.1	2.9
25–29	8.6	10.5	4.2	6.0
30–34	6.9	11.2	4.7	2.4
35+	21.1	42.0	14.0	6.2

Source: CCAA-3, table 12.

a. Excludes persons not living in households.

In 1980 a remarkably high percentage of Asian Indian males had professional occupations. Their concentration in the executive and professional ranks (57 percent) was the highest recorded of any ethnic group. To a more modest degree the same was true of Asian Indian females. Only Chinese males and Filipino females had patterns at all like that of Asian Indians, and even their levels were considerably lower.

To understand this professional and white-collar concentration, it is necessary to consider a more detailed breakdown of occupations. Table 16, which shows 13 broad occupational categories, reveals that Asian Indians in 1980 were virtually absent from many of them. In addition, we provide more detail on the most common occupations among Asian Indians. The following discussion is of persons who worked during 1979 and who reported an occupation in the 1980 census, not the "employed" in the usual sense. The source is our PUMS-S subsamples for Whites and Asian Indians. Our procedure here is to display detailed (three-digit code) occupations whenever 50 or more Asian Indians of either sex in the sample reported that occupation. It should be noted again that, because we are

Table 15. Percentage distribution of Asian Americans and native-born Whites and Blacks, by sex and broad occupational group: 1980 U.S. census

Sex and race	Total	Broad occupational group: Executive, administrative, managerial	Professional	Technical	All other groups
Males					
Asian Indian	100.0	14.9	41.7	8.0	35.4
White	100.0	13.5	11.5	3.1	71.9
Black	100.0	5.7	5.9	2.0	86.4
Chinese	100.0	15.0	23.6	6.7	54.7
Filipino	100.0	9.3	13.2	5.9	71.6
Japanese	100.0	17.0	16.5	5.5	61.0
Korean	100.0	14.5	18.5	5.1	61.9
Vietnamese	100.0	4.7	10.1	10.5	74.7
Females					
Asian Indian	100.0	6.4	27.1	7.0	59.5
White	100.0	7.8	14.6	3.1	74.5
Black	100.0	4.7	11.8	3.3	80.2
Chinese	100.0	10.4	14.5	5.9	69.2
Filipino	100.0	6.4	21.0	6.1	66.5
Japanese	100.0	8.3	14.7	3.1	73.9
Korean	100.0	5.7	11.7	2.5	80.1
Vietnamese	100.0	4.3	7.0	4.6	84.1

Source: PUMS-S.

working with a subsample of the PUMS sample, our results generally will not be exactly the same as those in published tables from the Census Bureau.

The most important revelation in Table 16 concerns the specific occupational specialties of Asian Indian professionals. We find that more than one in four among male professionals was a physician and that two out of three were physicians, engineers, architects, or surveyors. This finding contrasts with the much greater range of professional occupations among White males. Asian Indian female professionals were even concentrated in the "health diagnosing" professions (62 percent). Across the total occupational distribution one Asian Indian male in eight was a health professional and

Table 16. Percentage distribution of Asian Indians and Whites, by broad and selected detailed occupations and sex: 1980 U.S. census

	Males		Females	
Occupation	Asian Indians	Whites	Asian Indians	Whites
All occupations				
Number	(1,109)	(1,125)	(680)	(894)
Percentage	**100.0**	**100.0**	**100.0**	**100.0**
Executive, administrative, managerial	**17.3**	**15.8**	**5.7**	**7.9**
Executive, administrative, managerial	12.9	12.2	3.5	5.9
Management-related	4.4	3.6	2.2	2.0
Professional specialties	**42.4**	**10.1**	**26.8**	**13.0**
Engineers, architects, surveyors	17.0	1.9	0.6	0.4
Mathematicians, computer, natural scientists	5.1	0.8	1.9	0.3
Physicians	11.0	0.9	7.9	2.9
Registered nurses	0.5	0.1	6.9	0.6
Other health-diagnosing occupations	1.3	0.6	1.2	0.7
Teachers, post-secondary	4.1	0.7	1.9	5.4
Other teachers	1.4	2.4	3.4	2.7
Other professionals	2.0	2.8	2.9	0.0
Technical	**7.9**	**2.5**	**6.5**	**2.6**
Sales	**5.5**	**11.0**	**6.8**	**13.0**
Sales, retail and personal services	1.4	2.8	5.4	9.2
Sales, not elsewhere classified	4.1	8.2	1.3	3.8
Administrative support	**5.9**	**6.4**	**23.8**	**33.1**
Secretaries, stenographers, typists	0.4	0.4	7.1	13.9
Misc. administrative support	1.5	0.4	6.6	6.9
Administrative support, not elsewhere classified	4.0	5.6	10.1	12.3
Services, private household	**0.0**	**0.0**	**0.9**	**0.9**
Services, protective	**0.5**	**3.4**	**0.3**	**0.2**
Services, other	**4.6**	**4.0**	**12.1**	**12.8**
Health services	4.1	0.1	6.9	2.9
Services, not elsewhere classified	0.5	3.9	5.2	9.9
Farming, forestry, fishing	**1.4**	**4.4**	**0.9**	[illegible]
Precision production, etc.	**6.8**	**21.5**	**2.8**	**2.**[illegible]
Operators, not transport	**5.6**	**9.8**	**11.5**	**10.2**
Operators, transport	**0.5**	**7.7**	**0.3**	**0.8**
Handlers, cleaners, helpers, laborers	**1.6**	**3.4**	**1.8**	**2.1**

Source: PUMS-S.

Notes: Percentages may not sum exactly to 100.0 because of rounding.

one in nine was a physician; among Asian Indian females one in six was a health professional and one in 13 was a physician. That these are remarkable proportions is seen simply by considering the White population. Among White males in Table 16 fewer that one in 50 was a health professional, and among White females the ratio was about two in 50.

Table 16 reveals other notable patterns. Asian Indians were relatively well represented in the teaching profession, males generally at the postsecondary level and females at the lower levels. Teaching as an occupation was rare among White males; White females were well represented but only at the lower levels. Asian Indians, however, were underrepresented in the sales occupations, and few reported working in most service roles, in extractive occupations such as farming, or in most other blue-collar occupations.

The few remaining concentrations of Asian Indians are worth noting. Asian Indians were well represented in a range of technical occupations; and Asian Indian females, like their White counterparts, were found disproportionately in the administrative support occupations, though often in roles other than the usual ones of secretary, stenographer, or typist.

Measuring incomes in a census is a complex task, and comparing the results meaningfully across subgroups of the population requires great care. Individual incomes reflect personal characteristics, such as schooling and work experience, that bear directly on productivity; but incomes also reflect the society's treatment of race, gender, and other attributes. Moreover, incomes, and women's incomes in particular, may reflect decisions to work only part time or intermittently because of family or other obligations. It is generally found that women's incomes are well below those of men with similar educational and other backgrounds, even after part-time and intermittent work histories are taken into account. In the discussion that follows we always show male and female incomes separately, and we include an adjustment for the time spent working.

No matter how incomes are assessed, data for the 1960–80 period indicate that the relative positions of Asian Americans, both among themselves and compared with Whites, Blacks, and Hispanics, have been more or less constant over the last decade or two (Hirschman and Wong 1981, 1984; Wong 1980, 1982). In fact, the only significant development is that Asian Indians—who appear in the statistics for the first time in 1980—turn out to have the highest individual incomes of all. In our sample data, for example, Asian Indian incomes are fully 17 percent above the White level and even 9 percent above the Japanese (Table 17). These tabulations raise a caution concerning overall comparisons of this kind, for much depends on what one wishes to compare.

Table 17 distinguishes males and females and also shows an adjusted, hypothetical income figure that reflects the supposition that everyone report-

Table 17. Personal incomes of Asian Indians, Japanese, and Whites, by sex: 1980 U.S. census

Indicator and sex	Asian Indian	Japanese	White
Personal income from wages/salaries[a]			
Males	20,643	19,890	18,759
Females	9,685	10,327	7,908
Both sexes	15,574	14,224	13,237
Adjusted personal income[b]			
Males	21,570	21,583	19,618
Females	13,159	13,342	10,930
Both sexes	17,680	16,700	15,197
Number			
Males	1,140	846	1,193
Females	981	1,230	1,236

Source: PUMS-S.

a. Wage and salary income in 1979 among those who worked at all in 1979 and reported an income. Persons with a reported income of zero dollars were excluded.

b. Adjusted proportionately to income equivalent to 40 hours per week and 50 weeks per year.

ing an income worked full time all year in 1979. The entirely expected effect of this calculation, shown in the second panel of Table 17, is that male incomes rise slightly and female incomes rise substantially. (Among Asian Indians, for example, male incomes rise by 4.4 percent and female incomes by 35.9 pecent.) The more remarkable result is that, even after women's work patterns are adjusted in this way, their incomes still fall on average well below those for men. This is especially so for White women, whose adjusted incomes were 56 percent below White male incomes. Notably, Asian Indian and Japanese women did markedly better than did White women relative to their male counterparts.

Thus we have three sets of figures for Asian Indian, White, and Japanese income earners in 1979—for males, for females, and for both sexes—and the overall comparison favors Asian Indians by more than $1,300. But the margin among males is narrower ($753), and in fact Japanese women did better than Asian Indian women by nearly the same amount. Moreover, in the adjusted figures, which control for the time each population group spent working, Asian Indians, both male and female, did not do quite so well as their Japanese counterparts. The Asian Indian advantage was therefore due in part to their greater likelihood of working full time all year. In contrast, the combined result for males and females favors Asian Indians over Japanese. This at first mysterious result is easily explained by the relatively high ratio of female to male income earners among Japanese (59 percent) compared with Asian Indians (46 percent). Though among Asian Indians neither men nor women equaled the incomes of Japanese, their combined income level reflected mainly male incomes, whereas the combined income level of Japanese reflected mainly female incomes. The result is that the combined income level of Japanese was lower. It should be noted that White income levels, especially for females, were lower regardless of the kind of comparison made.

The remainder of this section is devoted to explicating just one of the factors underlying this overall comparison of personal incomes: formal schooling and the occupations that education makes possible. Our strategy here is to examine education and income among Asian Indians within the same broad occupational groups and the selected specific occupations we considered in Table 16. Data are presented in Table 18 for Asian Indian males and females, with similar data for Whites as a basis for comparison.

Among all males reporting an occupation, Asian Indians reported wage and salary incomes averaging $20,600, 10 percent above the incomes reported by White males. Among females the advantage of Asian Indians was greater, about 23 percent. This was so although the excess of Asian Indian over White schooling was much greater among males than among females. Division of these quantities (incomes/years of schooling) produces another kind of difference: this average "return" to, or benefit from, a year of education was highest for White males ($1,476), followed by Asian Indian males ($1,234), then Asian Indian females ($683), then White females ($637). The data reveal an important difference between ethnic groups in monetary rewards for schooling, but it was different for each gender, favoring White males and Asian Indian females. And there was a much more dramatic gender difference favoring males over females regardless of ethnicity. As we have seen, some of this gender difference was due to women's taking part-time or intermittent work, but not all of it.

Focusing now on the schooling and occupational component of these patterns, we first offer a few comments on income returns to schooling before discussing intervening occupational attainments. The educational attainments of Asian Indians in 1980 were of course much higher on average than those of Whites. Among income earners in 1979 no fewer than 71 percent of Asian Indian males and 39 percent of Asian Indian females had completed four or more years of college (Table 19). What is less obvious is that the income advantage of Asian Indians over Whites was virtually all due to their educational advantage. At each educational level Asian Indian males earned less income than White males. Asian Indian females had a slight advantage over White females at each educational level. This means that the whole of the vaunted Asian Indian income superiority over Whites has been due to the former group's higher educational achievement. In 1980, 64 percent of all Asian Indian income earners were college gradu-

Table 18. Mean education (in years) and income among Asian Indians and Whites, by sex, for selected detailed occupations: 1980 U.S. census

	Males				Females			
	Asian Indians		Whites		Asian Indians		Whites	
Occupation	Education	Income	Education	Income	Education	Income	Education	Income
All occupations	16.7	$20,600	12.6	$18,800	14.2	$9,700	12.4	$7,900
Executive, administrative, managerial	16.8	21,700	14.5	26,800			13.0	10,300
Executive, administrative, managerial	16.6	23,800	14.3	27,700			13.1	10,400
Management-related								
Professional specialties	18.8	26,300	16.8	25,900	16.8	15,800	15.4	10,100
Engineers, architects, surveyors	18.6	24,300						
Mathematicians, computer, natural scientists	19.0	21,100					—	
Physicians	19.6	38,600			19.6	23,200		
Registered nurses								
Other health-diagnosing occupations								
Teachers, post-secondary								
Other teachers								
Other professionals								
Technical	17.1	15,500						
Sales	14.9	14,900	13.3	17,100			12.4	6,400
Sales, retail and personal services								
Sales, not elsewhere classified			13.9	19,200			12.2	5,600

Administrative support	15.5	12,700	13.2	16,300	14.1	7,500	12.5	8,700
Secretaries, stenographers, typists								
Misc. administrative support							12.5	8,300
Administrative support, not elsewhere classified	13.0	16,300	13.9	7,800	12.6	7,500		
Services, private household							12.5	9,700
Services, protective	12.3	10,200			12.7	7,000	10.8	3,800
Health services			11.7	14,400				
Services, not elsewhere classified							10.8	4,000
Farming, forestry, fishing								
Precision production, etc.			11.3	16,000				
Operators, not transport	12.4	11,700	10.9	15,300	11.2	5,700	10.6	7,800
Operators, transport			10.6	17,200				
Handlers, cleaners, helpers, laborers								

Source: PUMS-S.

Note: A blank cell indicates that the means were not calculated because the number of cases was fewer than 50.

Table 19. Personal incomes of Asian Indian and White males and females, by level of education: 1980 U.S. census

(All estimates rounded to nearest hundred dollars)

Sex and education group	Asian Indian		White	
	Wage/salary income	%	Wage/salary income	%
Males				
Below high school	$ 9,500	4.3	$12,500	11.1
1-3 years of high school	10,100	4.3	15,300	14.2
4 years of high school	13,600	9.0	17,200	34.9
1-3 years of college	12,800	11.0	18,600	17.4
4 or more years of college	23,800	71.4	25,500	22.5
Total	20,600	100.0	18,800	100.0
Number		(1,140)		(1,193)
Females				
Below high school	5,500	11.8	5,400	10.4
1-3 years of high school	6,400	11.8	5,400	15.4
4 years of high school	8,300	16.4	8,000	45.3
1-3 years of college	8,100	20.7	7,400	15.8
4 or more years of college	12,600	39.3	11,200	13.1
Total	9,700	100.0	7,900	100.0
Number		(981)		(1,236)

Source: PUMS-S.

ates, compared with only 20 percent among White earners. No other group—neither other Asian Americans, Whites, Blacks, nor Hispanics—has achieved an educational level even close to that of Asian Indians.

Considering the detailed occupational groups in Table 18, we find that Asian Indian average incomes in 1980 were frequently below White average incomes, but they are well above White incomes in those broad professional and technical categories in which Asian Indians have been so concentrated. Across the entire occupational classification Asian Indians had more schooling than Whites in the same occupational categories. Detailed analysis would identify ethnic and gender differences in income returns to schooling, partly because of differences in the occupations and partly because of income differences within occupations and educational levels. But the differences do not consistently favor one or the other ethnic group, at least in this particular ethnic comparison. Gender differences are much greater and much more uniform. Indeed, the most striking comparison in Table 18 is between Asian Indian male and female physicians; they had the same levels of formal schooling, yet among physicians male incomes exceeded female incomes by about two-thirds.

These data suggest that a complex of relationships underlies the overall comparison made earlier. Moreover, we have been engaged in the relatively easy analytic task of decomposing occupations, genders, and age groups into component parts. The more difficult and important questions concern causal forces, the reasons for the patterns we observe. But analysis of causal factors would go beyond the scope of this paper as well as beyond the limits imposed by our data sources.

In the preceding discussion we have presented several important patterns of income within the Asian Indian population, in particular the very large difference between males and females and the great income differences among people at various educational levels. We have noted that on gender Asian Indians differ less than do Whites, whereas on educational attainment they differ even more. Other important differences deserve discussion, such as those between immigrants and the native-born and those among immigrants by period of immigration.

Table 20 presents estimates of these important income differentials, along with another set of income levels labeled "adjusted." The observed levels by sex and educational level reflect our earlier discussion, whereas those for nativity and period of immigration are newly introduced. Nothing need be said about the observed income levels except to note the pattern by nativity and period of immigration: low incomes were reported both by those who were newly arrived in 1980 and by those who were born in the United States. To grasp what is revealed by the adjusted figures, however, we need to recognize that each of the population subgroups is itself heterogeneous. Males and females had different educational attainment distributions, recent immigrants were less disproportionately male than were earlier immigrants, the native-born were disproportionately female, and so on. The adjusted figures tell us what the income patterns would be if the groups being compared were similar in composition. The gender differential, for example, declines sharply in the adjusted column, the adjusted male income level being lower and the adjusted female income level being higher. These adjusted levels reflect an assumption of more schooling for females and less for males such that the two groups have the same educational distribution. Similar adjustments are made simultaneously for the factors of gender, employment sector, nativity or period of immigration, region of residence, prestige of occupation, weeks worked in 1979, and usual hours worked per week in 1979. (For details see Barringer, Takeuchi, and Xenos 1986:footnote 3).

The results can be stated briefly. Male and female incomes come closer together, but still differ by $3,600. Since education and time spent working have been adjusted for, as have the kind of occupation and industry of em-

Table 20. Observed and adjusted incomes of Asian Indians, by sex, education, and nativity or period of immigration: 1980 U.S. census
(All estimates rounded to nearest hundred dollars)

	Estimate	
Population subgroup	Observed	Adjusted[a]
Sex		
Males	$20,300	$18,000
Females	10,100	14,400
Education		
No high school	8,400	14,600
1–4 years of high school	9,700	15,000
Some college or more	18,900	17,200
Nativity/period of immigration		
1970–80	14,500	15,100
1960–69	24,500	21,500
Before 1960	24,200	21,800
Native-born	11,500	16,100

Source: PUMS-S.

a. For each characteristic all remaining characteristics are adjusted.

ployment, we are left to consider factors specific to Asian Indians such as, perhaps, choices within Asian Indian households that women in those households devote themselves less than fully to income attainment in deference to other uses of their time. Surely Asian Indian women could be earning more, given their high educational levels. Still, we ought not lose sight of the fact that among women by Race in the United States Asian Indian women are the most highly paid, even taking into account their exceptional educational levels. For example, were Asian Indian women in these population subgroups to have the incomes of the corresponding Japanese groups, the overall income level of Asian Indian women would be some $1,300 less. (For details of this analysis see Barringer, Smith, and Gardner 1985.)

The low average income of those with less than a high school education proves to be due to one or more of the factors we have taken into account. Gender (most Asian Indians with low education are female), time spent working, and nature of employment (sector and prestige) are likely explanations. Roughly the same pattern occurs for nativity or period of immigration. In particular, the low average income of U.S.-born Asian Indians is largely eliminated in the adjusted income figures.

Turning to incomes of households (Table 21), we find that they seem at first glance to contradict what we have just observed regarding the su-

Table 21. Indicators of household workforce and income among Asian Indians, Japanese, and Whites: 1980 U.S. census

Indicator	Asian Indians	Japanese	Whites
Household income	23,228	25,345	20,902
Income per person	7,847	10,318	8,813
Income per worker	17,612	16,711	15,116
No. of persons per household	3.0	2.4	2.4
No. of workers per household	1.3	1.5	1.4
Number of households	(2,209)	(2,412)	(1,750)

Source: PUMS-S.

periority of Asian Indian over Japanese and White incomes. However, household incomes reflect differences in the the composition of households, in particular the size of households and the proportion of members who are income earners. Individual earnings are usually pooled to meet the expenses of families or households, so that an individual's need to work part or full time is assessed in light of group as well as individual circumstances. Moreover, the composition of a living unit may itself represent an effort to cope economically. These considerations make it necessary to examine household as well as personal incomes.

In 1980 the Japanese had the highest average level of household incomes, exceeding that of Asian Indians by 9 percent; and by a much wider margin (31 percent) they had the highest average level of income per person within households. That this was so despite a slightly lower average level of income per worker in Japanese than in Asian Indian households must be attributed to the fact that Japanese households were 20 percent smaller on average and had a larger proportion of members earning incomes. Income per person in Asian Indian households was below that for White households as well. Put another way, highly paid Asian Indian workers supported on average larger numbers of nonearners in their households, so that their income per person was lowest of the three groups even though their per-earner income was the highest. This interesting contrast between individual and household incomes is a potential source of confusion in income comparisons.

FAMILIES AND HOUSEHOLDS

Thus we find that to understand how Asian Indians adapt to life in the United States it is necessary to consider the organization of Asian Indian families and households a bit further. A complex body of statistical materials can be summarized for our purpose by highlighting two underlying processes. First is the household cycle itself, the pattern of family and household expansion and then diminution that is common to all populations. Second is the process of adaptation to American economic life that comes with length of time in the United States. We are interested in the variations in living arrangements—household size and composition and the kin relationships of those who are living together—and the variations in household income that are associated with these processes.

The householder's age is a reasonable indicator of a household's stage in its cycle of growth and decline. Even a broad classification by ages of householders (Table 22) is sufficient to reveal general patterns. (A "householder" is the person listed first on the completed census form.) The average household size of 3.0 persons (shown in first panel for all households) conceals a considerable range, from 2.0 when householders are under age 25, to 3.4 when householders are between ages 45 and 65, to only 1.4 when householders are 65 or older. To interpret these figures we must recognize that households can be formed by persons who are not related or who do not constitute families, as well as by primary families.[14] Some 28 percent of all Asian Indian households in the 1980 census were "nonfamily" households, but in most of them the householder was either youthful or elderly. About two-thirds of the young householders headed households of this kind, as did more than seven of ten among elderly householders. These nonfamily households tended to be small (see the third panel of Table 22), so that the change in household size with householder's age becomes rather less when we consider family households separately (cf. second panel). The relatively high frequency of nonfamily households among the young and the old is a notable feature of the Asian Indian household cycle, distinguishing it from the pattern for White households. Another interesting feature is the prevalence of other family members in youthful and aged family households. One of four relatives of the young householder was someone from outside the primary family, and among aged householders such household members were one of three.

The same kind of information by place of birth and period of immigration to the United States, presented in Table 23, indicates that immigrant households were substantially larger than native-born households, but that this was entirely due to the larger size of immigrant primary families rather than to the presence of "other family" or unrelated persons. The largest primary families, and thus the largest households, were found among those whose householders had arrived in the United States prior to 1970.

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[14] In the census "family households" are those containing at least one person related by blood, marriage, or adoption to the householder. All others are "nonfamily households." The "primary family" consists of the householder and his or her spouse or children.

Table 22. Indicators of household composition, workforce, and income, by age of householder: Asian Indians, 1980 U.S. census

Indicator	Age of householder				
	All ages	Under 25	25–44	45–64	65+
ALL HOUSEHOLDS (*N*)	(2,209)	(78)	(1,438)	(333)	(360)
No. of persons	3.0	2.0	3.3	3.4	1.4
Primary family	2.4	0.6	2.8	2.9	0.4
Other family	0.2	0.3	0.2	0.2	0.2
Unrelated	0.4	1.1	0.3	0.3	0.8
No. of workers	1.4	1.2	1.6	1.7	0.2
Household income					
Total	$23,228	$9,257	$26,581	$26,868	$9,497
Per person	$8,760	$5,200	$9,380	$9,070	$6,730
Per worker	$17,612	$7,411	$18,286	$17,711	$11,925
% of households					
Nonfamily	27.7	65.4	16.5	18.9	72.5
FAMILY HOUSEHOLDS (*N*)	(1,597)	(27)	(1,201)	(270)	(99)
No. of persons	3.6	2.7	3.7	3.9	2.5
Primary family	3.3	1.9	3.4	3.6	1.6
Other family	0.3	0.7	0.3	0.3	0.8
Unrelated	0.0	0.1	0.0	0.0	0.1
No. of workers	1.7	1.4	1.7	2.0	0.6
Household income					
Total	$27,567	$10,558	$28,344	$30,173	$15,669
Per person	$8,088	$3,827	$8,212	$8,496	$6,630
Per worker	$18,267	$7,049	$18,665	$18,010	$13,276
NONFAMILY HOUSEHOLDS (*N*)	(612)	(51)	(237)	(63)	(261)
No. of persons	1.2	1.6	1.2	1.1	1.0
Primary family					
Other family					
Unrelated	1.2	1.6	1.2	1.1	1.0
No. of workers	0.6	1.2	1.1	0.7	0.1
Household income					
Total	$11,908	$8,569	$17,648	$12,707	$7,155
Per person	$10,498	$5,931	$15,314	$11,516	$6,771
Per worker	$14,655	$7,588	$16,296	$15,736	$10,107

Source: PUMS-S.

Note: A blank cell means that information was not available for that type of household and householder age group.

Table 23. Indicators of household composition, workforce, and income, by nativity and period of immigration: Asian Indians, 1980 U.S. census

			Immigrants, by immigration period			
Indicator	Total	Native-born	Before 1965	1965–1969	1970–1974	1975–1980
ALL HOUSEHOLDS (*N*)	(2,209)	(454)	(236)	(326)	(617)	(576)
No. of persons	3.0	1.7	3.2	3.6	3.4	3.0
Primary family	2.4	0.9	2.7	3.1	3.0	2.4
Other family	0.2	0.2	0.2	0.3	0.2	0.2
Unrelated	0.4	0.6	0.3	0.2	0.2	0.4
No. of workers	1.4	0.5	1.4	1.7	1.7	1.5
Household income						
Total	$23,228	$11,648	$31,913	$32,829	$27,715	$18,558
Per person	$876	$704	$1,075	$1,065	$946	$746
Per worker	$17,612	$12,714	$24,094	$22,125	$18,189	$13,369
% of households nonfamily	27.7	60.6	26.7	12.3	14.1	25.5
FAMILY HOUSEHOLDS (*N*)	(1,597)	(179)	(173)	(286)	(530)	(429)
No. of persons	3.6	2.8	4.0	4.0	3.7	3.5
Primary family	3.3	2.2	3.7	3.6	3.5	3.2
Other family	0.3	0.5	0.3	0.4	0.2	0.3
Unrelated	0.0	0.1	0.0	0.0	0.0	0.0
No. of workers	1.6	1.0	1.8	1.7	1.8	1.7
Household income						
Total	$27,567	$17,193	$38,886	$34,526	$29,393	$20,435
Per person	$8,088	$6,465	$10,647	$9,468	$8,529	$6,269
Per worker	$18,267	$13,556	$25,048	$22,424	$18,538	$13,510
NONFAMILY HOUSEHOLDS (*N*)	(612)	(275)	(63)	(40)	(87)	(147)
No. of persons	1.2	1.1	1.1	1.2	1.2	.13
Primary family	—	—	—	—	—	—
Other family	—	—	—	—	—	—
Unrelated	1.2	1.1	1.1	1.2	1.2	.13
No. of workers	0.6	0.2	0.5	1.1	1.1	1.0
Household income						
Total	$11,908	$8,038	$12,768	$20,699	$17,495	$13,081
Per person	$10,498	$7,418	$11,046	$19,099	$15,115	$10,952
Per worker	$14,655	$11,133	$18,469	$19,950	$15,945	$12,905

Source: PUMS-S.

This household pattern contrasts sharply with the living arrangements found among many of the other Asian American immigrant groups, especially Filipinos, Koreans, and Vietnamese, for whom recent-immigrant households were relatively large and contained large numbers of "other family" and unrelated persons (Gardner et al. 1985:20 ff.). Their household patterns reflect economic strategies common in immigrant groups, such as the sharing of major household costs and the provision of resources to other kin as they arrive in the United States. Although we do not have direct evidence, the census data on households just reviewed suggest that these strategies are not common among Asian Indians. Instead we find that the Asian Indian community is composed mainly of smaller and simple family households. In addition there is a group of nonfamily households within which we distinguish youthful and aged households as inferred by the ages of householders. Further tabulation of the 1980 census data indicates that the youthful households were primarily immigrant households (91.3 percent), and particularly recent immigrants (75.4 percent), whereas the aged households were made up mainly of native-born Asian Indians (82.8 percent).

Although we lack direct information on the ways that Asian Indians may be employing these living arrangements to ease the process of immigration and economic adjustment, we do have some direct evidence regarding work force participation and income patterns at the household level. These data also appear in Tables 22 and 23.

The usual tendency of household and per-person incomes to rise and then to fall with householder's age is evident in Table 22. But the most important observation concerns the distinct income patterns of family and nonfamily households. In 1980 nonfamily households were small and had proportionately even fewer workers than family households. Morever, the workers in these households had low incomes. In Table 23 we find that the same observations apply to subgroups by nativity and period of immigration. Immigrant family households had substantially higher incomes than nonfamily households, resulting from high ratios of workers to nonworkers and very high personal incomes. The immigrant nonfamily households had lower incomes mainly because per-worker incomes were low.

THE ASIAN INDIAN POOR

One useful means to understanding family and household processes in relation to economic issues is to consider characteristics of the losers in the process, the poor. Discussions of poverty in America generally focus on the recent feminization of poverty due to marital instability, and on the implications of this trend for children. That is, American poverty is linked closely to a breakdown in family processes, so that women and children suffer disproportionately. Among Asian Indians, in contrast, "poverty" and "families" seem to be virtually unrelated. In the census data we have examined there is little indication of marital instability, at least of marital dissolution involving children. Ninety-two percent of all family households in the 1980 census contained both husband and wife. The Asian Indian poverty that exists takes other forms.

The overall poverty rate recorded in 1980 among Asian Indian households was only 11.6 percent, and among family households the poverty rate was but 7.8 percent.[15] In contrast, 21.7 percent of all nonfamily households were poor. The profile of Asian Indian family households below the poverty line indicates that they are mainly youthful, recent-immigrant households that have not yet gained a foothold in American society. There is every reason to expect that they will succeed in the end, however. One-third of the householders in 1980 had college degrees; fewer than one in ten had difficulty with the English language. Their immediate difficulties stemmed from the relatively large size of their households (3.7 persons) and the small number of workers (1.0 persons) earning low incomes ($3,500 on average).

One large group of these householders (33.1 percent) was not in the labor force in 1979. Only one in eight was still in school, and therefore we cannot easily explain why so many householders were not in the labor force, nor what were their sources of support. They were disproportionately male and married (both 73.2 percent) and more than half had arrived in the United States in the 1970s. Significantly, from a welfare standpoint, this category of poor households contained virtually no children.

The remaining two-thirds of the poor family households seem to consist of householders who earned low incomes because of working intermittently in 1979 (three-fourths worked fewer than 40 weeks). Many of these householders were still in school. It should be noted that these households were larger than better-off family households because they had more offspring of the householder. They reported an average of 3.5 children ever born, and two-thirds of the households had one or more children in the household; one in five had a child under age six. Given this profile, it is remarkable that only one in 12 of these poverty households reported receiving public assistance.

The youthful, poor nonfamily households seem to contain in many cases students living on institutional or family support, and are thus enmeshed in the special kind of poverty associated with the student life. Our census evidence for this assertion is, it must be stressed, indirect. In 1980,

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15. The discussion in this section is based on tabulations from PUMS-S not shown here. The federal government's family poverty threshholds take into account family size, age of householder, and number of related children (USBC 1982).

79.6 percent of such householders were single, 83.3 percent were male, and the households contained virtually no children. Only 55.6 percent of the householders were in the labor force in 1979 and only 37.0 percent worked during that year. Virtually all of them spoke English well or very well. Only one in five was a U.S. citizen. Since they reported virtually no public assistance income and their reported income from all sources was but $1,327, we infer that they received considerable support from elsewhere.

The aged, poor nonfamily households present a contrasting profile. The householders here had low educational levels, and they were disproportionately female (85.9 percent) and widowed (73.4 pecent). Few had worked in 1979. Their low household incomes ($2,257) were derived almost entirely from social security transfers ($1,720), reported by 75.0 percent of these households. Only 17.2 percent reported any public assistance, however, and the average public assistance payment per household (including households with zero receipts) was but $300.[16]

THE FUTURE OF THE ASIAN INDIAN COMMUNITY

There are many sources of uncertainty regarding the future of this remarkable community, among them the matter of future numbers, any assessment of which hinges largely on prospects for continued immigration. Survivorship can change but little from its current already high level, and rates of childbearing are low and unlikely to rise. As a basis for discussion we draw upon a set of projections prepared by Bouvier and Agresta (1987) for each of the Asian American communities.

The projections incorporate continued substantial immigration of Asian Indians via the family preference categories. Together with likely patterns of fertility and mortality, this immigration produces the following series of Asian Indian population totals:

Year	Population (in thousands)
1980	387 (estimate)
2000	1,006 (projection)
2030	1,919 (projection)

If immigration continues, the population may be expected to grow by 2.6 times by the year 2000, and then nearly to double again to almost two million by the year 2030.

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[16] This is a typical profile for American households of the aged. We are puzzled however, by the finding that most of these Asian Indian householders (87.5 [illegible]cent) claimed to be native-born. Nine of ten reported that they could speak [illegible]anguage but English. We commented earlier on the possible anomaly of nu[illegible]rous aged, female, native-born Asian Indians.

More important than simple population totals are the changes in age and sex composition that are implied by these assumptions. Figure 3 illustrates a few important changes and further distinguishes two population groups: those already in the United States in 1980 (and their future descendants) and those projected to arrive subsequently (and their descendants). The normal aging and survivorship of the 1980 resident population will produce among them in future decades a declining share of the most productive adult ages and a growing share of the elderly and relatively dependent. Note the bulge among those in their 50s in the year 2000 and among the very old in 2030. The ratio of persons 65 and over to those 15–64, a simple measure of the dependency burden on the working population, rises from 78 per thousand in 1980 to 84 in 2000, and to 216 in 2030.

We have stressed that these projections reflect the assumption of continued substantial immigration. The immigrant component of the total Asian Indian population is projected to be just over one-half in 2000 and about three-fourths by 2030.

We would expect the concentration of Asian Indians in metropolitan and suburban areas to persist. Their regional concentration in the North and North Central regions, however, is likely to diminish. That this process has already begun is indicated by the 1980 census data on change of residence between 1975 and 1980.

It is clear from these future population scenarios that the Asian Indian community is in for considerable change in the years ahead. The overall socioeconomic level of Asian Indians in the future will reflect mainly the characteristics of future immigrants rather than of those already here. And we have seen that the remarkably high levels of professional immigration are not being maintained among the most recent immigrants, who are being admitted on the strength of their relationships with U.S. citizens rather than on the basis of their schooling.

Our evidence is almost exclusively economic, and Asian Indians are extremely well assimilated economically. But they constitute a highly diverse community on cultural, religious, and other dimensions vital to the community's life, which are not reflected in the statistics and are belied somewhat by the group's economic homogeneity. How Asian Indians ultimately accommodate themselves to life in the United States remains an open question, though they certainly have the economic resources to support whatever life style they choose. Complete assimilation into American society seems to be an option, but one not likely to be attractive to many Asian Indians. Appadurai and Breckenridge (1987) make a strong case for a vigorous Hindu presence in the United States, as part of a transnational culture closely tied to India and to Asian communities elsewhere (see also Williams 1988). The metaphor of a banyan tree (Tinker 1977), taken from the Bengali poet Rabin-

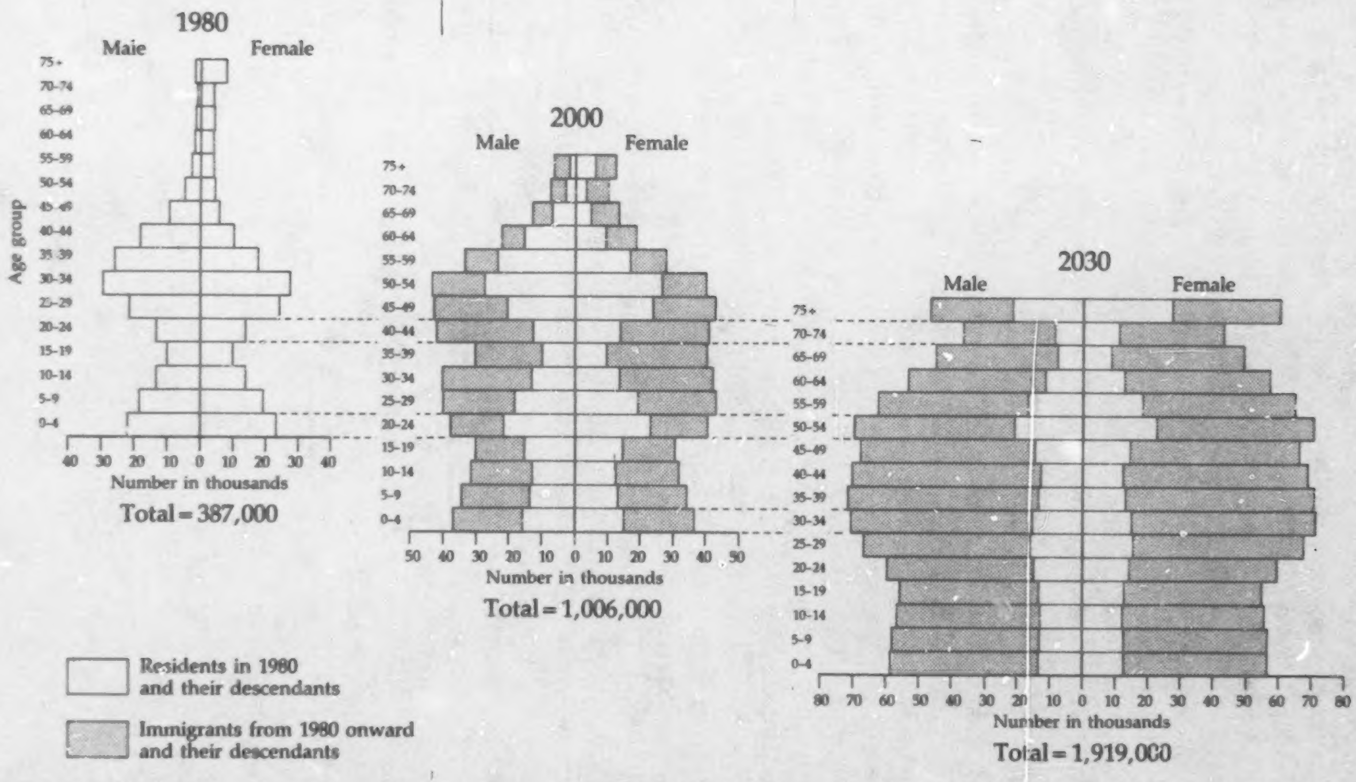

Figure 3. Population projections to the year 2030 for Asian Indians
Source: Bouvier and Agresta (1987; unpublished data).

dranath Tagore and employed in reference to the Commonwealth overseas communities, may be relevant to South Asians in the United States as well.

We have some misgivings about the statistical data and methods we have used to identify Asian Indians, and this problem is related to questions of shifting personal and group identities. What kinds of Asian Indian are there? What are the degrees of membership in the Asian Indian community? What is the importance of birthplace and race to behavioral characteristics such as language use? How well or poorly does "Ancestry" capture these complications? How do census categories relate to other behavioral characteristics associated with culture, caste, and religion that are assessed in other data on Asian Indians but not in the United States census?

The Asian Indian population is bound to become economically more diverse as time passes, given that the current adult population was admitted to the United States on occupational and educational grounds, whereas the most recent arrivals (into the 1980s) have come as family members of the earlier group. Recent Asian Indian immigrants are better educated than the general U.S. population but not as distinctly so as their predecessors; they are not moving into the labor force with the same ease, in part because of important changes in the American job market. They are going to end up in a wider range of jobs and earn a wider range of incomes.

The projected age–sex pyramids for the years 2000 and 2030 suggest a rising problem of dependency burdens within Asian Indian households as the current middle-age group ages. Much depends upon whether traditional values affecting care of the elderly are retained by the generation now in its childhood. This issue may underlie the ambivalence some Asian Indians have expressed about returning to India someday. The current affluent generation of Asian Indian adolescents will be faced, more often than in the past, with surviving, aged parents. Will the traditional Asian Indian attitude toward their care prevail, or will American values and behavior win out? On one hand, the demography of this group makes this issue even more important than it would otherwise be. On the other, the relative affluence of the older generation of Asian Indians will help to alleviate the stresses involved.

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Jonathan Rigg

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International Contract Labor Migration and the Village Economy: The Case of Tambon Don Han, Northeastern Thailand

Jonathan Rigg

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CONTENTS

ACKNOWLEDGMENTS *vii*

ABSTRACT *1*

BACKGROUND OF INTERNATIONAL LABOR MIGRATION IN THAILAND *3*

TAMBON DON HAN: SETTING THE SCENE *8*
- The Tambon *8*
- The Study Communities *15*

FORCES ENCOURAGING INTERNATIONAL LABOR MIGRATION IN TAMBON DON HAN *18*
- Conditions in the Villages *18*
- Characteristics of Migrant and Nonmigrant Households *21*

THE PROCESS OF MIGRATION *28*
- Securing a Contract *28*
- Economic Activity and Networks *30*
- Costs of Migration *33*
- Job Placement Agencies and Their Methods *37*

THE TIME AWAY AND THE RETURN HOME *38*
- Social Implications *39*
- Economic Implications *40*
- Returning Migrants *42*

PATTERNS OF EXPENDITURE AND INVESTMENT *43*
- Consumption versus Production *44*
- Agricultural Expenditure *45*
- Other Types of Expenditure *49*
- Acquisition of Skills *51*

MIGRATION AND NONMIGRANTS *52*

VILLAGE PERSPECTIVES ON MIGRATION *53*

A TYPOLOGY OF MIGRATION IN THAILAND *54*

SUMMARY *56*

REFERENCES *59*

EXHIBITS, FIGURES, MAPS, AND TABLES

Exhibits

1. Advertisement for work in Saudi Arabia (from *Raeng Ngaan Thai,* 25–31 July 1988) *26*
2. Employment contract for work in Saudi Arabia *34*

Figures

1. International migrants registered with the Department of Labour, 1976–87 *5*
2. Intensity of fertilizer use and cassava yields: Tambon Don Han *48*
3. Intensity of fertilizer use and rice yields: Tambon Don Han *48*

Maps

1. Regions of Thailand and study area *4*
2 Location of research villages *10*
3. Land use: Tambon Don Han, 1954 *13*
4. Land use: Tambon Don Han, 1967 *14*

Tables

1. Destination of Thai workers traveling abroad, by region and country: 1987 *6*
2. Remittances from the Middle East, 1974–86 *7*
3. Characteristics of international migrants from Thailand as reported in recent studies *9*
4. Socioeconomic characteristics of Baan Don Han, Baan Noon Tun, and Baan Sawaang Morodok *17*
5. Characteristics of migrant and nonmigrant households: Baan Don Han and Tambon Don Han *22*
6. Distribution of landholdings and income, by migrant status of households: Baan Don Han *24*
7. Characteristics of international migrants from Tambon Don Han *28*
8. Income generation among international migrant laborers from Tambon Don Han *43*

9. Use of funds generated through international migrant labor: Tambon Don Han 44
10. Fertilizer and labor use for rice and cassava production among migrant and nonmigrant households: Tambon Don Han 47

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ABSTRACT This paper examines the causes, process, and impacts of international contract labor migration in three villages in the province of Khon Kaen, Northeastern Thailand. The data are drawn from a semistructured questionnaire conducted among 129 households, supplemented with additional informal survey work. The study demonstrates that the causes and effects of migration can be understood only when the process is placed within its local context. It also argues that few studies come to terms with the problems involved in the identification and characterization of migrants and nonmigrants, nor with the difficulties of dividing remittance expenditure into "productive" and "consumptive" categories. Differences between villages in the incidence of migration are seen to be linked primarily to the networks of contacts that build up over time between individuals, communities, and companies, and not to income nor any other readily measurable index of wealth. The inhabitants of Tambon Don Han perceive international contract labor migration to be one of the few ways by which farmers from this traditionally poor region of Thailand can save sufficient funds to set themselves up in life and protect themselves during those years when harvests are poor and their luck turns.

> *I wanted to have a lot of children and grandchildren around me but now cities and foreign lands have attracted my children away from me and it seems that none of them will ever come back to live here again. Who shall I give these paddy fields to when I die? For hundreds of years this strip of land has belonged to our family. I know every fissure and mound on it. My children grew up on it, catching frogs and mud crabs and gathering weed flowers. Still the land could not tie them down or call them back. When each of them has a pair of jeans, they are off like birds on wings. What has happened to them I don't know, but they must think that what is ahead is better than getting bogged down in the poverty of our land.*
>
> —Pira Sudham, *People of Esarn* (1987:38)

International contract labor migration from rural areas has attracted considerable attention, both academic and official, and a large body of work now exists on the subject (for a review see Rigg 1988b; Arnold and Shah 1986). A broad distinction can be made between the African and Asian experiences. The former is often viewed as largely negative. The process, especially if it involves migration to the Republic of South Africa, is seen to undermine agriculture in the source communities; to be self-perpetuating, creating a dependent relationship; to erode traditional customs and mores; and to end up being a strategy of survival rather than of accumulation. In contrast, the Asian experience has tended to be regarded more favorably. Rather than contributing to economic stagnation, it is often seen to be a stimulus to growth and a means by which rural households can improve the conditions of their lives. Nevertheless, even accounting for this rough division between work conducted in the Asian and African contexts, it remains true that no consensus has evolved. To expect it to do so may be naive, given the vastly different conditions—social, economic, and environmental—in which international labor migration may occur. Further, it is striking how far much of the work conducted on the subject is dependent upon value judgments and casual impressions. Whether a study concludes that migration is good or bad so far as the source community is concerned is often a matter more of faith than of analysis.

Although international labor migration is far from being underresearched, some elements of the subject have received inadequate attention, both with respect to Thailand and in the wider arena. This paper addresses these elements while attempting to present an integrated picture of the entire migration process. In Thailand a substantial proportion of the work conducted on migration has taken a macroeconomic view. There have been few attempts to understand the relationship between international labor migration and the village and local economies. In the general absence of such work, it is difficult to understand both the motivation for migration and the pattern of remittance expenditure that ensues (Farooq-i-Azam 1987). There are a handful of exceptions to this rule, however. Possibly the most influential paper has been Textor's *From Peasant to Pedicab Driver* (1961). Of the more recent work, the research of Singhanetra-Renard (1982, 1983, 1988) conducted in the Northern and the Northeastern regions of Thailand is also worthy of note. A second area where additional work is required concerns the difficulties and complexities of isolating migrants and nonmigrants as particular groups and assessing the characteristics of each. Finally, although it has previously been noted that there is a tendency in Thailand for communities to become "migration-specific" (Fuller, Kamnuansilpa, Lightfoot, and Rathanamongkolmas 1983:13–14; Singhanetra-Renard 1983:15), this has not been sufficiently elaborated upon. A paper by Singhanetra-Renard (1988), which has come to my attention since this study was completed, likewise stresses the importance of information networks and patron-client relationships in understanding why particular villages become migration-specific. Her results, in general, support the main conclusions of the study.

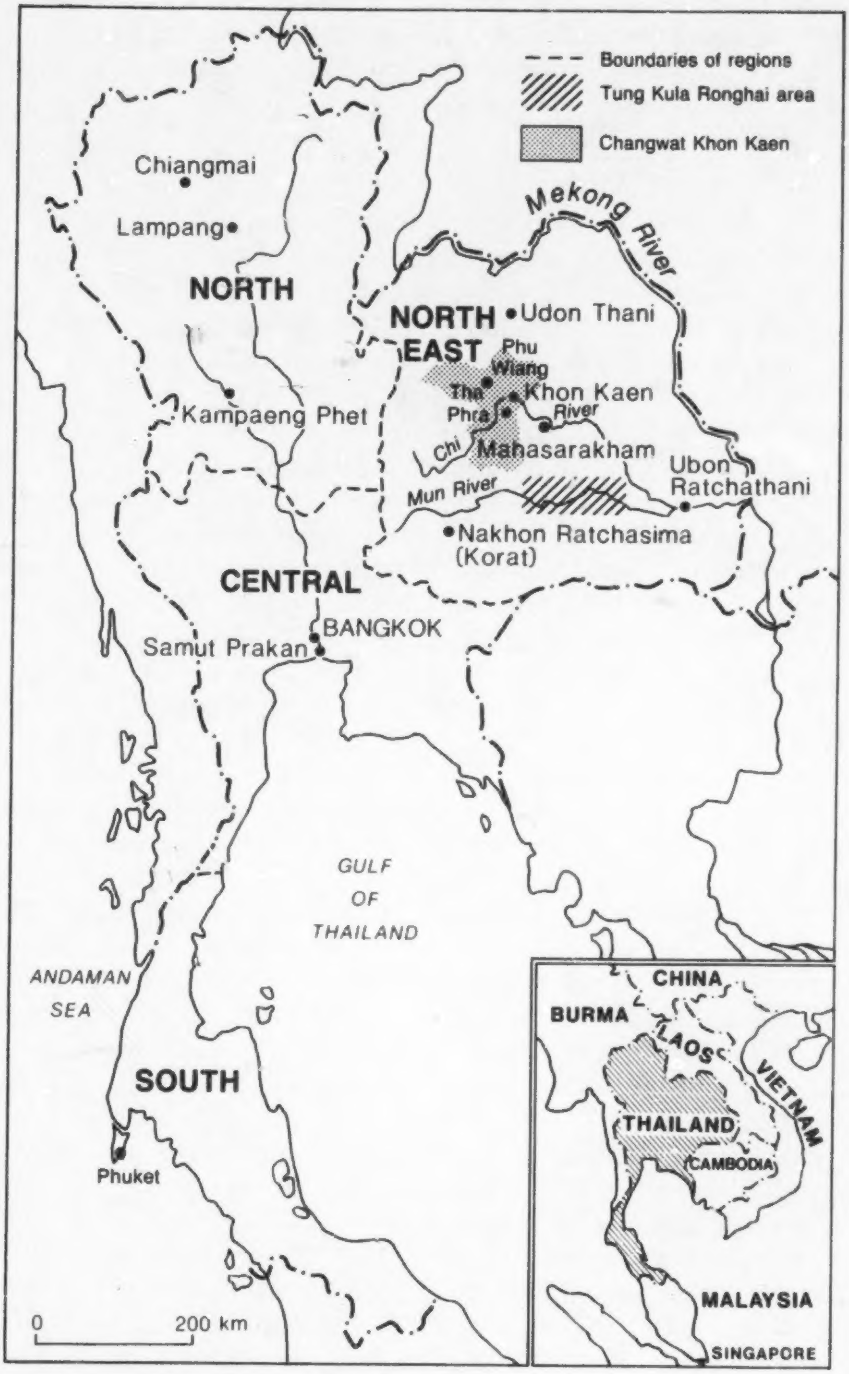
I feel strongly that migration from rural communities cannot be examined as an isolated phenomenon. Such migration is both a reflection and a product of the conditions and opportunities that exist at the local level and, incidentally, at the regional, national, and international levels. Only by placing migration in its local milieu—physical, social, and economic—is it possible to explore the forces that drive and mold the process and, partially, to understand them. For this reason, migration is seen in this paper as an adjunct to the wider farm economy, and a good deal of the discussion is concerned with placing it within this context. If migration, whether it be temporary or permanent, national or international, is examined in isolation, there is always a tendency for it to be seen as a singular and homogeneous activity, whereas it is complex and heterogeneous, occurring for many reasons and having many different outcomes.

BACKGROUND OF INTERNATIONAL LABOR MIGRATION IN THAILAND

Internal labor migration on a limited scale has been a feature of Thai economic relations for more than two hundred years, and possibly considerably longer. In the middle of the nineteenth century, it was given a major boost when the commercialization of the rice economy in the Central Plains led to a greatly increased demand for wage labor. The demand was partially met by villagers from the drought-prone and impoverished Northeast (Johnston 1975:225–234). Reliable estimates of the numbers of seasonal laborers traveling from the Northeast to the Central Plains are not available, although it is certain that the flow involved several thousand Laos, and probably considerably more. The conditions encouraging the movement were similar, in both the source and the destination areas, to those that fuel migration today. As Johnston notes (1975:226), "Just as central Thai farmers needed the additional labor which the northeast could provide, so the relative poverty and the limited opportunities of the northeastern economy insured that labor on a central Thai farm was worth a Lao's while."

Besides providing labor for the expansion of rice cultivation, Northeasterners worked on sugar farms in the Central Plains, on logging enterprises in the North, in the tin mines of Phuket in the South, and on the construction of railroads linking Bangkok with Chiangmai and with Korat, Khon Kaen, and Ubon Ratchathani (Map 1). The Northeast has not only been a source of labor, however; the region has also traditionally acted as a reservoir of cattle and buffalo, which were bought or bartered and then driven in caravans down to the Central Plains, or to Korat, for sale. Although it is difficult to gauge the proportion of villages involved in the activity, Fallon (1983:248) states that, of the large sample he surveyed, "five-sixths [of the informants] reported that such caravans set off regularly . . . in earlier years."

International labor migration has also been under way for some years. During the colonial period in Southeast Asia, Thais were to be found working on the gem fields of Burma and Indochina, as well as in British Malaya. More recently, Thais were employed in Laos during the Vietnam War. The majority of those moves across national borders were informal and unofficial, however, and so went unrecorded. So far as the official statistics are concerned, significant international movements of Thai labor are a recent phenomenon. In 1976 the Department of Labour of the Thai government recorded that only 1,287 Thais traveled abroad to work (Figure 1). By 1982,


Boundaries of regions
Tung Kula Ronghai area
Changwat Khon Kaen
Mekong River
Chiangmai
Lampang
NORTH
NORTH EAST
Udon Thani
Phu Wiang
Tha Phra
Khon Kaen
River
Chi
Mahasarakham
Ubon Ratchathani
Mun River
Nakhon Ratchasima (Korat)
Kampaeng Phet
CENTRAL
BANGKOK
Samut Prakan
GULF OF THAILAND
ANDAMAN SEA
SOUTH
Phuket
0
200 km
CHINA
BURMA
LAOS
VIETNAM
THAILAND
CAMBODIA
MALAYSIA
SINGAPORE

Map 1. Regions of Thailand and study area

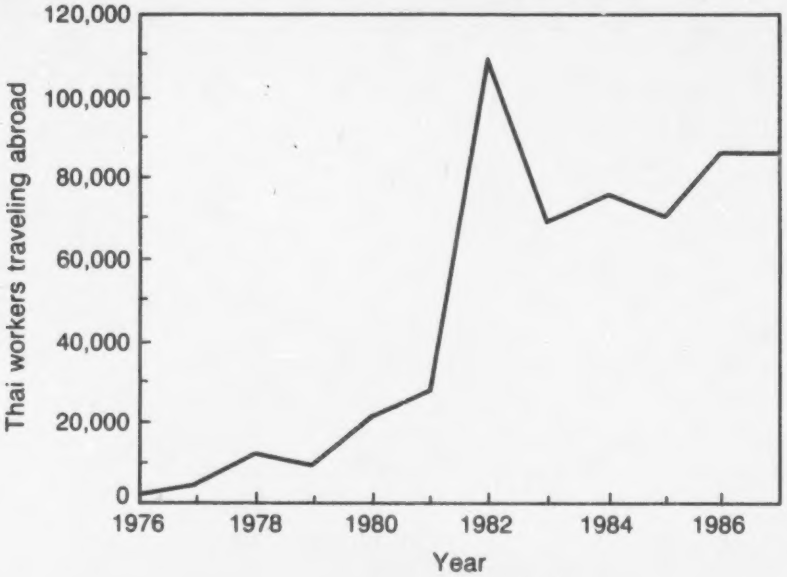


Figure 1. International migrants registered with the Department of Labour, 1976–87

the peak year according to official statistics, the figure had risen 82-fold to nearly 105,000; then it dropped slightly thereafter so that, in 1987, 85,512 Thai workers were recorded as leaving the country. Although this growth in international labor migration is impressive, the official figures considerably understate the true rate of out-migration (Stahl 1984:25–30; Visetbhakdi 1986:437–438). By no means are all job placement agencies registered with the Department of Labour, and illegal migration is widespread. This means that estimates of the number of Thais working abroad can be only approximations, which vary greatly. Stahl (1984:25–30), using the level of remittances recorded by the Bangkok Bank and the Bank of Thailand (the central bank), the average migrant salary, and the proportion of salary remitted, calculated that in 1983 between 165,000 and 225,000 Thais were working overseas. Another figure, this one for 1985, estimated that approximately 320,000 registered and unregistered Thai workers were abroad (Visetbhakdi 1986:437–438), whereas the Department of Labour, in a booklet distributed by the Overseas Employment Administration Office, provides a figure of 500,000 (Thailand Department of Labour, n.d.:20).

By far the most important destination for Thai migrants is the Middle East, which in 1987 received 88 percent of the total, the majority of these traveling to Saudi Arabia to work (Table 1). Outside the Middle East the most popular destinations are Singapore, Japan, Brunei, and Malaysia, receiving among them 10 percent of the total. Because of the relative ease of travel to Malaysia and Singapore, it is likely that proportionately more

Table 1. Destination of Thai workers traveling abroad, by region and country: 1987

Region and country	Number	Percentage
Middle East	**75,113**	**87.84**
Saudi Arabia	56,056	65.55
Libya	7,850	9.18
Iraq	3,869	4.53
Kuwait	2,351	2.75
United Arab Emirates	1,786	2.09
Qatar	1,151	1.35
Bahrain	846	0.99
Other Middle Eastern countries	1,204	1.41
ASEAN[a]	**7,249**	**8.48**
Singapore	3,629	4.24
Brunei	2,904	3.40
Malaysia	705	0.83
Other ASEAN countries	11	0.01
East Asia	**1,873**	**2.19**
Japan	1,481	
Hong Kong	392	
Other regions	**1,277**	**1.49**
United States and Western Europe	957	1.12
Other countries	320	0.37
All regions	**85,512**	**100.00**

a. Association of Southeast Asian nations, which also includes Indonesia, the Philippines, and Thailand.

migrants traveling to those two destinations go unrecorded. With the recent downturn in construction and other sectors of the Middle Eastern economy as a consequence of the fall in oil prices, the market for foreign labor in the region has contracted somewhat (Nagi 1986:58–64), and national development plans envisage further cuts. For example, Saudi Arabia's current six-year economic development plan (1985–90) envisages a cut in the stock of foreign workers by some 600,000 (Visetbhakdi 1986:437). In response to the declining prospects in the Gulf states, employment in alternative countries is taking on a new significance. Opportunities in other countries of the Middle East and North Africa, such as Iraq and Algeria, have been developed (Nagi 1986:63), although there is little chance that these will fully replace the jobs lost in the Gulf. More important as a source of future growth are opportunities in some Asian countries, most notably Malaysia, Singapore, and Japan. Job placement agencies in Thailand are already diversifying their contacts with employers abroad in an attempt to offset the fall in Middle Eastern demand. Nevertheless, the countries of the Gulf—and particularly Saudi Arabia—have become dependent upon migrant labor, and substantially reducing that dependence will not be easy nor will it be achieved in the short term (Findlay 1987:24–25). It is now clear that neither Saudi Arabia nor Kuwait will be able to achieve the cuts proposed in their development plans, and it is also thought that by 1990 the stock of foreign labor employed in the Gulf will begin to grow once again (*The Economist* 1988:56).

Reflecting the increase in the number of international migrants, remittance flows also rose dramatically between 1974, when remittances from the Middle East as recorded by the Bank of Thailand amounted to 100,000 baht, and 1984, reaching a peak of 16,456.6 million baht, or 9.5 percent of total export earnings (Table 2).[1] In 1985 and 1986, however, they fell, amounting to only 10,471.5 million baht in 1986, or 4.6 percent of total export earnings (BBMR 1987:294). As with the numbers of Thais traveling abroad, the

Table 2. Remittances from the Middle East, 1974–86

Year	Million baht
1974	0.1
1975	1.6
1976	15.0
1977	87.7
1978	511.4
1979	1,294.0
1980	4,051.5
1981	6,393.5
1982	10,271.3
1983	15,641.8
1984	16,456.5
1985	12,924.4
1986	10,471.5

Sources: Visetbhakdi (1986:439); Tingsabadh (1987:19).

---

[1] One baht equals US $0.040–0.039; one US dollar equals 25–26 baht.

official remittance figures considerably understate the true volume. In the early years of international migrant labor, when banking facilities were poorly developed, a substantial proportion of earnings was brought back in the form of cash. Recent studies have shown that even today migrants continue to return with large sums on their persons. Tosurat, Uitragoon, and Kongnit (1987:227), who conducted a village-level study in Nakhon Ratchasima, record that when migrants returned home they carried with them an average of 19,200 baht in cash and 10,800 in gifts. This represented more than one-fifth (22.5 percent) of a migrant's total annual income.

Of Thai migrant workers, the majority are unskilled (in the formal sense) and take jobs as laborers, many of them working on construction sites. Their level of education is low, nearly all are male, and typically they are in their 30s (Table 3). As for their geographical distribution, the proportion originating from Bangkok has declined from almost 23 percent of the total in 1977 to less than 3 percent in 1983 (Tingsabadh 1987:7). Over the same period the importance of the North and the Northeastern regions has increased markedly. It is noteworthy how pockets of migration exist, with particular provinces and even particular villages having a tradition of sending large numbers abroad. Lampang in the North and Nakhon Ratchasima and Udon Thani in the Northeast are such areas of high out-migration, and this is undoubtedly linked to the fact that all three provinces contained U.S. Airforce bases during the Vietnam conflict (Map 1). The presence of the bases meant that a pool of semiskilled labor existed that was familiar with foreigners and their working practices, as did contacts between the local population and the construction companies that served the U.S. bases, and which later secured contracts in the Middle East (Singhanetra-Renard 1988:5–6). Also important as a source of international migrants is Khon Kaen, another province with well-developed communications and a certain cosmopolitan sophistication.

TAMBON DON HAN: SETTING THE SCENE

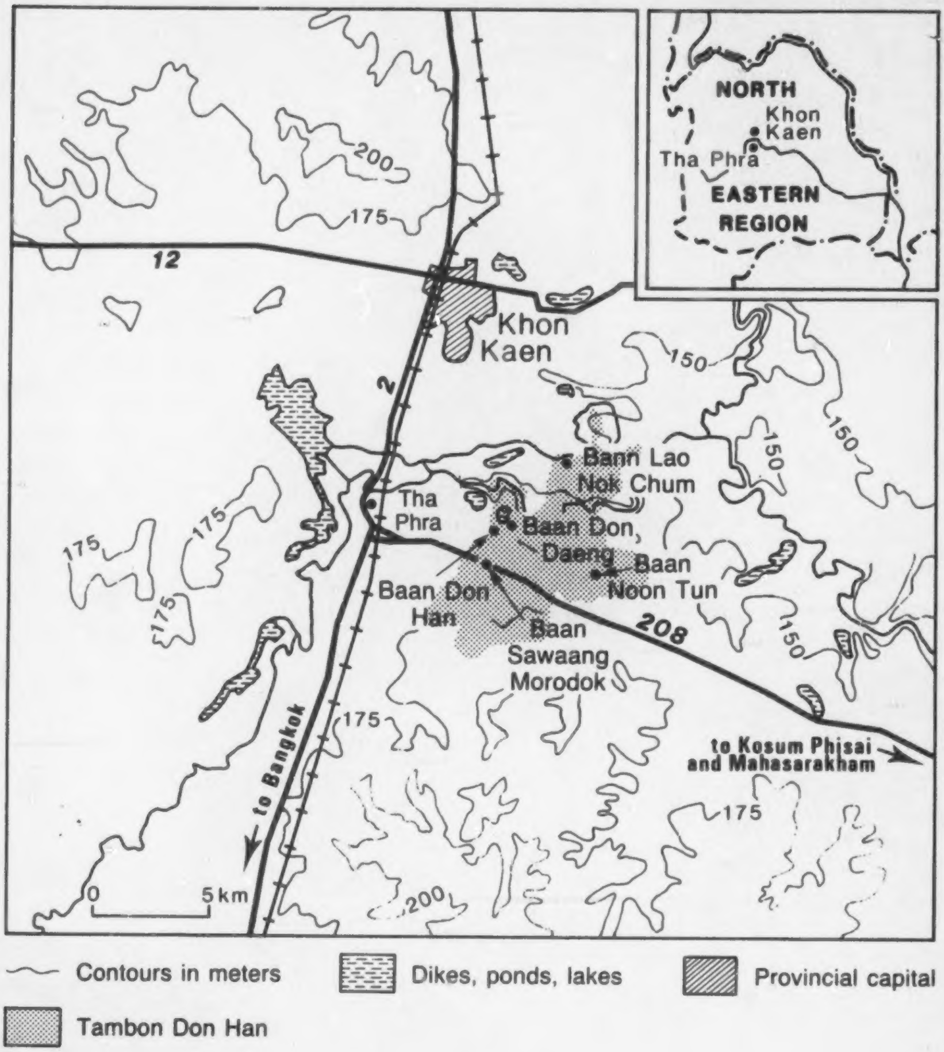
The Tambon

Tambon (commune) Don Han consists of eleven villages located in the *Amphoe* (district) of Muang, *Changwat* (province) Khon Kaen, approximately 20 kilometers outside the provincial capital (Map 2). The tambon has a combined population of 8,064 in 1,334 households (1986 data) and straddles Route 208, an asphalt road running from Tha Phra to Mahasarakham. Communications between the tambon and the outside world are excellent and there is easy access to the town of Khon Kaen, to other regional centers, and to Bangkok. This ease of transportation is not peculiar to Don Han, for communications in the Northeast are generally of a high standard.

Table 3. Characteristics of international migrants from Thailand as reported in recent studies

Study and migrant characteristics	Roongshivin et al. (1986)	Pitayanon (1986)	Pitayanon (1983)	Poapongsakorn and Sangthanapurk (1988)
Study				
Date of survey	1985	1983	1982(?)	1987
Location	Khon Kaen	Lampang	Northeast	Udon Thani
Sample size	113	105	397	83
Migrants				
Mean age	36	31	34	31
% male	100	100	99	100
% married	89	70	90	92
% with ≤4 years of education	89	82	78	93
Primary job in Middle East	Laborers	Laborers	u	Laborers
% farmers in Thailand	Most	83	63	95
Remitted income (baht)	70,081	67,670	u	u
Cost of securing contract (baht)	28,828	33,700	25,000	29,872

u—data unavailable.


NORTH
Khon Kaen
Tha Phra
EASTERN REGION
200
175
12
Khon Kaen
150
2
Bann Lao Nok Chum
Tha Phra
Baan Don Daeng
Baan Noon Tun
Baan Don Han
Baan Sawaang Morodok
208
to Kosum Phisai and Mahasarakham
to Bangkok
0
5 km
Contours in meters
Dikes, ponds, lakes
Provincial capital
Tambon Don Han

Map 2. Location of research villages

The tambon occupies a position on the edge of the flood plain of the Chi, a tributary of the Mekong and a major river of the Northeast. The pattern of settlement of the area has been one in which the most easily managed and most productive land was cleared first. As the staple crop of the region is wet rice, this is the land located on the lower terrace, where the topography is reasonably flat and the soils are alluvial but where some protection is afforded against severe flooding. These first communities were founded more than 200 years ago. As the population of the area grew, however, so more marginal land had to be cleared and exploited. Rice fields were created on the flood plain of the Chi River itself and along the smaller tributary streams that flow into the Chi. Here, narrow fingers of lowland suitable for rice cultivation, some only 50 meters wide, cut into the surrounding higher land. These more recently cleared lands faced, and still face, increased hazards from both flood and drought. This final period of settlement and land clearance occurred a little more than 50 years ago (Fukui, Kaida, and Kuchiba 1985).

Initially the inhabitants of the area met their needs through the cultivation of glutinous wet rice. This would have been supplemented by fish, frogs, insects, game, tubers, and other natural products caught and collected from the surrounding rivers, streams, ponds, paddy fields, and forests.[2] Much of the upland remained forested and was used for the collection of these natural products and as a source of fuelwood and for hunting. The forests must also have been viewed as a haven for spirits and brigands. As was the case in the great majority of villages in this area of Thailand, the economy remained largely subsistence-oriented until recently. Mizuno (1971) who between 1964 and 1966 conducted a famous study of Baan Don Daeng, one of the villages within Tambon Don Han, describes an economy that was only just beginning to open up to outside influences. Although Mizuno recognized that cash was important and likely to become increasingly so, the concerns of villagers remained focused upon the production of rice and other agricultural products for home consumption.

This is not to say that Tambon Don Han was unaffected by the commercialization of the Thai economy, which had been under way since the reign of King Rama III (1825–51) and which accelerated after the visit of Sir John Bowring to the country in 1855 and the signing of the Bowring Treaty. The treaty removed many of the restrictions on trade between Great Britain and Siam (as Thailand was then called) and led to the signing of similar treaties with the other major Western powers (Terwiel 1983). The completion of the railroad from Bangkok to Korat in 1900, and then its extension to Khon Kaen and Ubon Ratchathani in 1933 and 1938, respectively, further stimulated commercialization in the region. Considerable quantities of rice were sold to Chinese traders, who exploited the growing rail network to expand their areas of operation (Fallon 1983:244). The location of Tambon Don Han so close to the railhead at Tha Phra (Map 2) must have helped to promote cash crop production there at an early date by providing easy access to merchants and middlemen. An interdisciplinary group from Kyoto University's Center for Southeast Asian Studies who, building on Mizuno's work, conducted an intensive survey of the area recorded that the cultivation of crops for the market began as early as 1941 (Kaida 1985:33). At that time the effects of the Second World War led to a boom in cotton production that lasted for the duration of the conflict, and the farmers of the area commonly produced for sale between one and two *rai* (1 rai = 0.16 hectares; 1 hectare = 6.25 rai). This was followed by the cultivation of the fibre crop kenaf *(Hibiscus cannabinus* and *H. sabdariffa)*, which spread through the Northeast in the late 1950s and early 1960s (Rigg 1987). In addition, it is likely that some villagers would have traveled to the Central Plains to work during the long and unproductive dry season, again taking advantage of the tambon's proximity to the railroad linking Khon Kaen with Bangkok. Nevertheless, and as Mizuno's (1971) study makes clear, these commercial developments were at the margins of village life and for the majority of the population did little to undermine their traditional subsistence economy.

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[2] The importance of natural products in the diet of Northeasterners is made vividly clear in novels such as *Luuk Isan* (Child of the Northeast) by Kampoon Boontawee (1976), which tells of village life in the region in the 1930s. Although the destruction of the forests of the Khorat plateau has reduced the scope for the collection of natural products, they still represent an important element in the diet of many villagers (Somnasang, Rathakette, and Ratanapanya 1986).

Nevertheless, although the communities of the tambon may have been subsistence-oriented little more than 20 years ago, they have undergone revolutionary change in the intervening period. In the 1960s, cassava *(Manihot utilissima)* was introduced to the area as a cash crop. Farmers discovered that it was not only well suited to the environmental conditions found on the uplands, but that it was also perfectly in tune with the cash and labor constraints they faced. This discovery, in conjunction with the increasing pressure of needs resulting from improving communications and the intrusion of the cash economy,[3] encouraged farmers rapidly to clear the forested upland and plant it to cassava (Maps 3 and 4). The villages in the best position to exploit this new-found crop and opportunity were those established during the later period of land colonization and positioned on the upper margins of the lower terrace.

The expansion of cash cropping has not been the only development to affect Tambon Don Han in the last 20 years. Roads have been built, schools improved, electricity provided, water and sanitation facilities expanded, and health centers constructed. The growth in population and the closing of the land frontier, both upland and riceland, have also caused average landholdings to decline in size and some farmers to become marginalized or landless. These developments have been counterbalanced to some extent, however, by a widening of opportunities. The growth of Khon Kaen town into a regional center and its selection as a growth pole has

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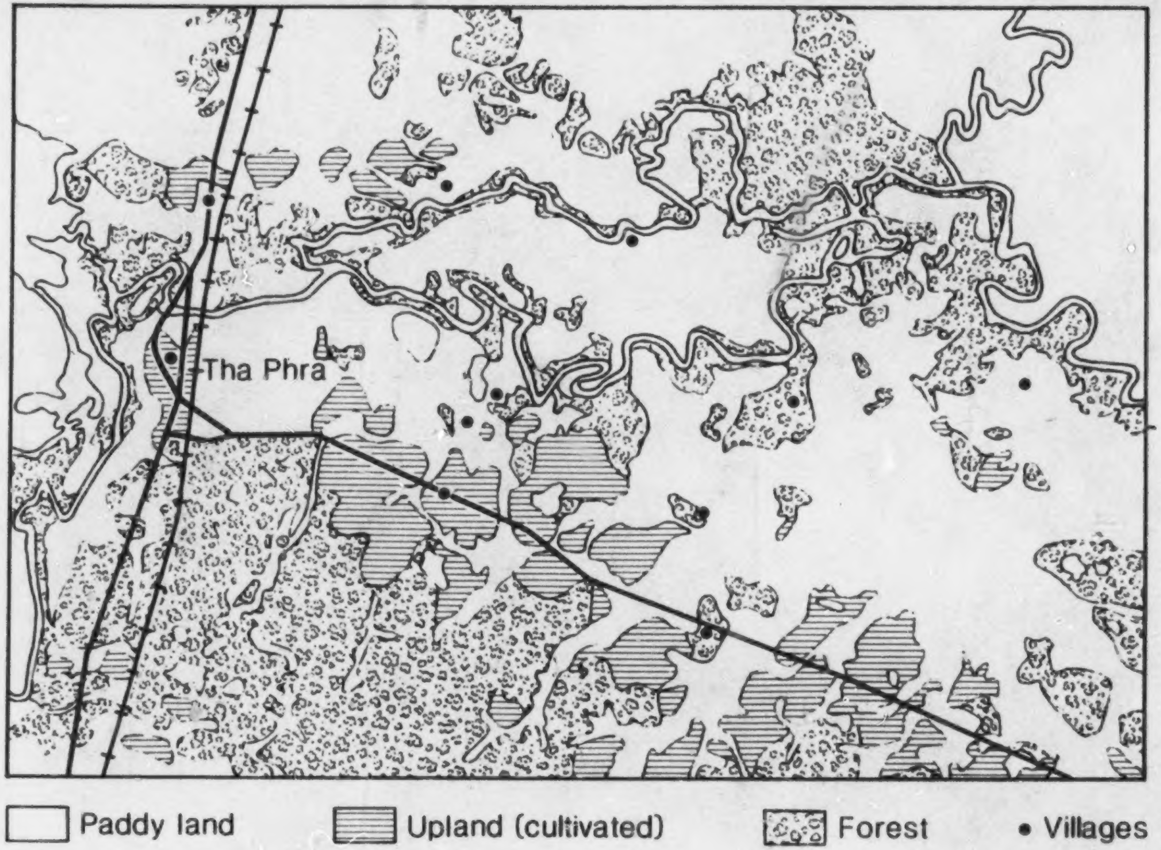
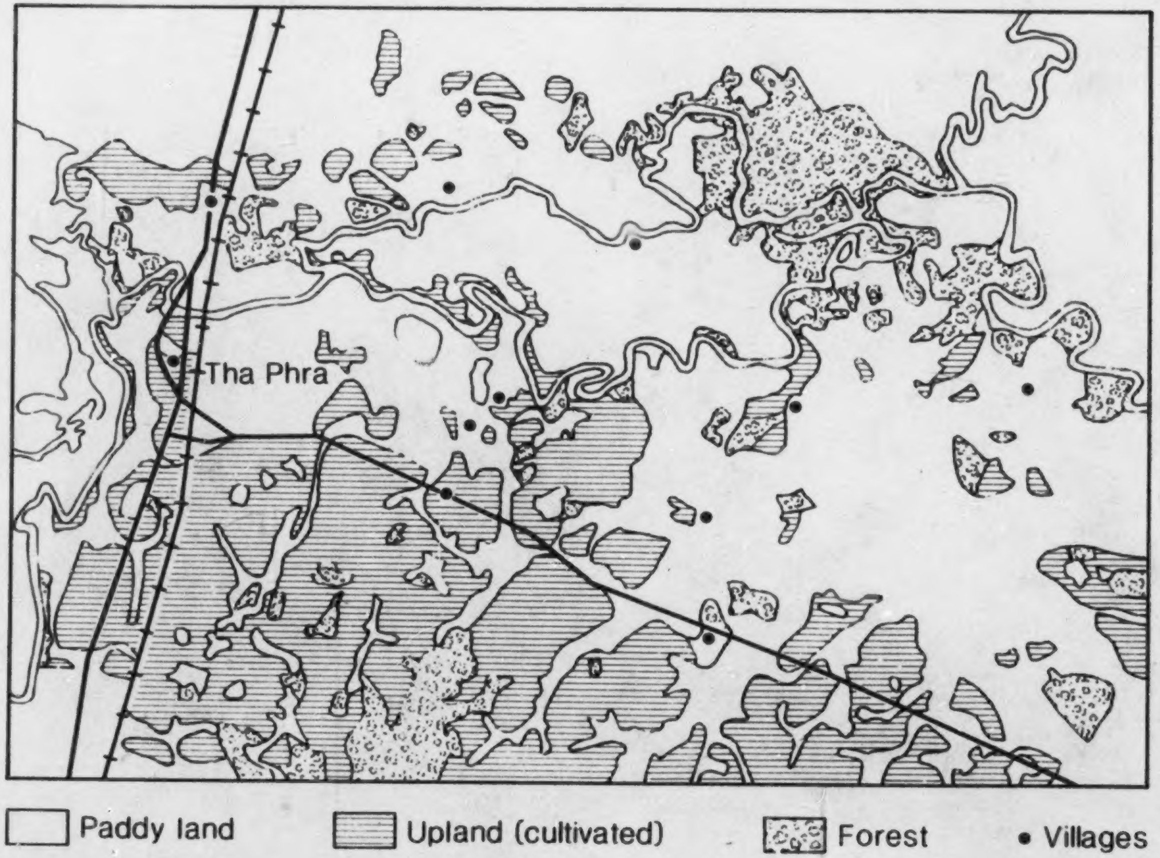
[3] The intrusion of the cash economy into rural areas in developing countries is widely discussed in the literature. The use of the word "intrusion" is misleading, however, insofar as many rural populations, far from being reluctant capitalists, welcome and embrace the economy.


Tha Phra
Paddy land
Upland (cultivated)
Forest
• Villages

Map 3. Land use: Tambon Don Han, 1954


Tha Phra
Paddy land
Upland (cultivated)
Forest
• Villages

Map 4. Land use: Tambon Don Han, 1967

provided nonagricultural employment for some villagers, for example in factories and construction or as house maids. In addition, the commercialization of the farm economy has caused wage laboring to become a source of income for land-poor households, while increased seasonal or temporary migration to Bangkok, the Central Plains, and other countries has provided a further opportunity for income generation outside agriculture.

The Study Communities

The following account of international labor migration is based upon a survey conducted in three of the 11 *baan* (villages) that constitute Tambon Don Han—Baan Don Han, Baan Noon Tun, and Baan Sawaang Morodok (Map 2). The survey covered 129 households (126 of them agricultural) representing 29 percent of the total in the three survey villages, and the work was conducted during the summer months (June–August) of 1987 and 1988. After having asked for, and received, the permission of the headman of each of the three communities, I selected the survey households, using a stratified sample so that each area of the villages received approximately equal attention. For the interview itself I used a semistructured questionnaire, and each interview took approximately 30–45 minutes to complete. Respondents were encouraged to elaborate if their answers were particularly interesting, and in many cases I asked additional questions so that a line of inquiry could be pursued. The villagers of the survey communities were forthcoming and cooperative, and at no time did they appear reluctant to answer my questions.

Where possible, household heads were interviewed. In those cases where the migrant was still absent, I questioned his wife. In general, it was best when husbands and wives were interviewed together, as each had slightly different perspectives to offer. This was especially true of migrant households: the wife could provide insights into the problems connected with a migrant's absence, whereas the migrant himself could supply answers concerning his motivation for migration and his experiences abroad. Of the migrants interviewed in Tambon Don Han, the first to engage in international labor migration was the headman of Baan Don Han, who left his village in 1982. The great majority had departed more recently, however: five in 1983, three in 1984, 12 in 1985, seven in 1986, four in 1987, and a single individual in 1988. In total, the survey covered 33 international labor migrants from 32 households.

Of the three villages, Baan Don Han warrants the closest attention, as nearly 50 percent of its households have, or have had, members working abroad. The remaining two communities are not so dependent upon international labor migration and are used mainly as yardsticks with which to gauge conditions as they exist in Baan Don Han. This is not to suggest that Baan Noon Tun and Baan Sawaang Morodok have had no experience of the process, for villagers from both villages are currently working overseas.

All three communities, in spite of substantial diversification in their economies, are agriculturally oriented and generally correspond to what might be regarded as the Northeastern village norm. Villagers consider themselves first and foremost to be rice farmers. They grow glutinous rice in rain-fed conditions to meet their subsistence needs, the preeminent upland cash crop is cassava, land is owner-occupied, and additional income is earned through a variety of agricultural and nonagricultural activities such as livestock raising, vegetable cultivation and sale, wage labor, and migration. In this sense the economy is consistent with the notion that the Northeastern village maintains a diversified village portfolio of activities that in no small way is a reaction to the marginality of the environment and the difficulties of cultivation (Grandstaff 1988; Thomas 1988). However, the villages of Don Han, Noon Tun, and Sawaang Morodok do have their own particular economic characters and beyond rice cultivation, which is common to all three, have specialized in certain activities (Table 4). Baan Noon Tun has a large number of households involved in the cultivation of vegetables for sale and in construction work in Khon Kaen; Baan Sawaang Morodok has a tradition of horse raising; both Baan Sawaang Morodok and Baan Don Han plant considerable areas of land to the cash crop cassava; whereas Baan Don Han sends many of its young men overseas to work. To an extent, the character of each community can be linked to environmental differences. Most obviously (see Map 4), the lack of upland landholdings among the households of Baan Noon Tun is a reflection of its location on the flood plain of the Chi River. In contrast, Baan Don Han and Baan Sawaang Morodok, established as they are on the margins on the lower terrace, have access to considerable areas of land suitable for the cultivation of dry-foot crops such as cassava. These differing land characteristics also help to explain the levels of rice production in the three villages. The lower rice land of Baan Noon Tun, for example, was less affected by the drought of 1985–87 and proportionately more rice was planted there (Table 4). But although environmental factors are crucial in determining some of the characteristics of the villages in question, others are harder to explain. For example, why so many households in Baan Noon Tun should be involved in vegetable cultivation and marketing, so many in Baan Sawaang Morodok in horse breeding and, most pertinently, so many in Baan Don Han in international labor migration is far from obvious.

Table 4. Socioeconomic characteristics of Baan Don Han, Baan Noon Tun, and Baan Sawaang Morodok

Characteristic	Baan Don Han	Baan Noon Han	Baan Sawaang Morodok
Number of households	218	140	85
Average household size	6.0	6.7	6.
Sample size	47	41	38
Landholdings, in rai (hectares)			
Rice	14.4 (2.3)	11.3 (1.8)	15.0 (2.4)
Upland	13.3 (2.1)	2.2 (0.4)	14.5 (2.3)
Total	27.7 (4.4)	13.5 (2.2)	29.5 (4.7)
% owner-cultivated	78	76	79
% riceland-planted	60	84	54
Rice production, kg/rai (kg/hectare)	70 (438)	283 (1,769)	153 (956)
Income, by source, in baht			
Rice	32	178	211
Upland crops	19,225	2,684	17,189
Livestock	3,905	5,995	8,082
Vegetable sales	233	3,598	1,032
Remittances	12,807	3,556	3,553
Other	6,573	13,361	11,338
Total	42,775	29,372	41,403
Labor migration			
Households involved, internal	0	7	0
Households involved, international	23	1	8

FORCES ENCOURAGING INTERNATIONAL LABOR MIGRATION IN TAMBON DON HAN

Conditions in the Villages

Many previous studies of international labor migration in Thailand and elsewhere have tended to emphasize how unattractive a proposition it is: farmers must leave their families for extended lengths of time; they must often live and work in cramped and uncomfortable settings; they frequently move to alien cultures where food and language are unfamiliar; and they are sometimes treated poorly by the indigenous population. Pongsapich (1988), for example, in her case study analysis of migration to the Gulf region, quotes numerous examples of migrants being disappointed with their work and conditions, sometimes returning home ahead of schedule: "Although the contract specified that he was supposed to be a cleaner with payment of 7,500 baht per month, he ended up being a street sweeper with payment of 4,200 baht per month, with no other benefit, no food allowance, and poor living conditions. He worked for only 3 months and returned home with great disappointment" (Pongsapich 1988:14).

The corollary of a perspective such as this, which maintains that migration is difficult and unattractive, is that there must exist considerable pressures and incentives encouraging farmers to leave their villages in the first place. Although such pressures and incentives certainly do exist in Tambon Don Han, the unattractiveness of labor migration seems to be often overstated. Problems do arise—two of the 32 migrant households interviewed had had negative experiences—but these should be kept in perspective. For the majority of migrants, conditions are acceptable and their time away bearable. Some appear to have actually enjoyed their sojourn abroad, reveling in the excitement and camaraderie, and returning somewhat reluctantly to life in the village.

A problem encountered in any examination of migration in Thailand is the extent to which villages are migration-specific. The type of migration practiced, its organization and, often, how successful it is perceived to be, differs markedly from community to community. In consequence, examples of cheating and malpractice by brokers and job placement agencies tend to be geographically clustered, and studies conducted in villages in close proximity to one another may arrive at sharply differing conclusions. Attempting to produce a balanced appraisal is thus extremely difficult. All that can be said is that migrants remain willing to pay large sums of money for the chance to work abroad, and many of those who have been cheated in some way desire to try again.

The great majority of the migrants from Tambon Don Han, when asked the simplistic question "Why did you go to the Middle East?," would reply—equally simply—that they wished to be wealthier. That farmers desired to be wealthier was scarcely remarkable. A more appropriate question is, why did farmers believe it necessary to work abroad in order to meet this objective? To answer this question, it is necessary to examine the economy of the area and the opportunities it offers. Land in Don Han is no longer freely available and landholdings are shrinking as population pressures grow. Unfortunately, the classic means of increasing output in such a situation, through the intensification of production, is strictly limited, for the marginal environment imposes severe constraints on the raising of yields (Rigg 1985). In response to the limited opportunities within rice and and upland crop cultivation, farmers have attempted to diversify their agricultural activities and to engage in work outside agriculture. The young are especially pessimistic about their prospects for making a respectable living in traditional agriculture, and some of those interviewed also felt that farming was too hard a life. As a result, many were hoping to find work in the factories located in and around the town of Khon Kaen.

As important as the limited agricultural potential is the widening pressure of needs in the area. Farmers require many more goods and services if their desires are to be fulfilled, and these goods and services can be acquired only with cash. Products such as radios, tape recorders, and even television sets, which are still regarded as luxuries in more remote villages, have come to be regarded as household necessities in Tambon Don Han. This change is in part a result of migration itself, and the process is self-reinforcing. Some farmers would say that it was the fact that their brother or one of their neighbors had left to work in the Middle East that encouraged them to migrate. The sight of their friends and relatives returning with money and gifts, and even with a certain prestige, must have had quite an influence upon them. The importance of the so-called demonstration effect in encouraging chain migration has been noted elsewhere, and the effect may even cross provincial boundaries. For example, Singhanetra-Renard, in her (1983) study of Lan Tong village in the province of Chiangmai in Northern Thailand (see Map 1), states:

> . . . a wife of one Middle East worker from Lan Tong is from Chiang Rai Province, about 300 kilometers from Sam Kamphaeng District [where Lan Tong is located]. When the husband of this girl returned, they visited her mother. His successful experience inspired interest in all four of his wife's brothers and one brother-in-law to go to the Middle East (Singhanetra-Renard 1983:10).

This picture of Tambon Don Han may give the impression that it has been the changes lately imposed on the villages through the commercialization of production and of life that has forced the population to look beyond the confines of their communities for income-earning opportunities. But, as I noted in the introductory section, Northeasterners have long looked outside the region to secure their livelihoods, and farmers have been migrating, temporarily and permanently, for nearly a century, and in some areas considerably longer. It is the pace of change that has accelerated, and this faster pace has placed additional demands on the society and the economy. Some researchers have viewed these additional demands and the responses of farmers to them in a critical light, decrying the farmers' increasingly acquisitive values, the importance of cash, and the erosion of traditional society. But these are not the only pressures that have driven the farmers of Tambon Don Han to work abroad. Farmers also have costly aspirations for their children and wish to be able to provide for their families the benefits of modern medical care, education, electricity, and improved housing and sanitation.

This environmental and economic backdrop partly explains why farmers in Tambon Don Han, and indeed in the whole Northeastern region, should find it necessary to engage in labor migration. Another factor, however, is that the region suffered a drought during the three seasons from 1985 to 1987. In the case of migration to Bangkok, the drought gave an added stimulus to the process and also extended the length of time that some migrants were away from home. Many did not bother to return for the rice season in 1987—the poor rains meant that there was no need—and preferred to supplement their incomes by remaining in Bangkok:

> As in many northeastern villages after the harvest season, a deadly silence is falling upon the nearly empty settlement [of Baan Nongkham] as the young families leave to sell their labour elsewhere. These seasonal migrants will return home when the rice planting season begins again in May, if nature and rainfall are punctual. This was not the case last year, which explains why the village is now emptier than ever. Drought persisted until November, and when the rains eventually came they were very sparing (Ekachai 1988a:35).

The effects of the drought on international labor migration were less pronounced, as securing a job overseas is more difficult, requiring considerable funds and planning. It also tends to be a strategy of accumulation rather than one of survival and is therefore less responsive to fluctuating conditions in the Northeast. Nevertheless, one respondent did say that his grandson had left eight months previously to work in Saudi Arabia largely because they had been unable to plant their 31 rai (5.0 hectares) of riceland. The drought therefore reduced their labor requirements and provided an added inducement to obtain alternative work abroad.

So far the discussion of the pressures encouraging migration has dealt with conditions in the tambon in general terms. However, examining the economic characteristics of the three villages individually (Table 4) offers few insights into the incidence and pattern of international migration. Baan

Don Han, the community with 50 percent of its households involved in international labor migration, is similar to the two control villages of Baan Noon Tun and Baan Sawaang Morodok. But comments by individual villagers and their headmen did indicate that push and pull forces were at work. They observed, for example, that the inhabitants of the neighboring community of Baan Lao Nok Chum (Map 2) had little need to search for employment outside their community because their riceland was irrigated and the farmers of Baan Lao Nok Chum therefore could farm consistently throughout the year. The headman of Baan Don Daeng, in contrast, stated that, because his village was short of land and that which they did cultivate was susceptible to flooding, the villagers could not rely on agriculture to fulfill their needs and were forced to look for work elsewhere. In Tambon Don Han, therefore, conditions favor migration in most of the villages, including the three survey communities. Land is in short supply, agriculture faces severe environmental constraints, and the pressure of needs is forever growing. International labor migration, however, is only one of several escape avenues open to farmers. Why one village should specialize in one activity and another village in another is not immediately apparent. As I will argue shortly, the pattern of specialization in the tambon, especially the pattern of international labor migration, is related primarily to networks of contacts both between individual villagers and between the villagers and the outside world.

Characteristics of Migrant and Nonmigrant Households

It is frequently stated that migrants and migrant households in rural communities represent a particular group in village society, that they have certain characteristics that make them distinguishable from the typical villager (Pitayanon 1986; Dias 1986; Corner 1981; Grasmuck 1984). Not only do they tend to be male and young, but also they are thought to be better educated, more motivated, and wealthier than villagers who do not migrate. This is particularly the case, it is argued, where international migrant labor is concerned as the costs to the migrant are that much greater, making it difficult for poor households to finance the process. The implications of such a division between migrant and nonmigrant households are important. For if international labor migration, as a means to generate wealth, is open only to the rich, then it will cause inequalities to widen further still.

Table 5 indicates that migrant households in Baan Don Han were not obviously more advantaged than nonmigrant households at the time of the survey. They owned and operated approximately the same amount of land, they had the same level of education, and they had similar levels of income. Indeed, if remittance income is deducted, the incomes of migrant households were considerably lower than those of nonmigrant households. This difference raises the question of the opportunity costs of migration:

Table 5. Characteristics of migrant and nonmigrant households: Baan Don Han and Tambon Don Han

Characteristic	Migrants		Nonmigrants	
	Baan Don Han[a]	Tambon Don Han[b]	Baan Don Han[a]	Tambon Don Han[b]
Average household size	6.3	6.3	5.8	7.0
% of household heads with ≤4 years of education	96	97	96	95
Sample size	23	32	24	94
Landholdings, in rai (hectares)				
Riceland	13.6 (2.2)	15.3 (2.5)	15.1 (2.4)	14.5 (2.3)
Upland	13.7 (2.2)	13.4 (2.1)	13.0 (2.1)	10.0 (1.6)
Total	27.3 (4.4)	28.7 (4.6)	28.2 (4.5)	24.5 (3.9)
Loans outstanding, in baht[c]	3,130	3,875	2,987	2,401
Income, by source, in baht				
Rice	65	47	0	182
Upland crops	17,322	16,513	21,049	13,552
Livestock	1,897	3,082	5,830	7,593
Remittances	25,697	26,064	454	580
Vegetable sales	0	450	456	2,182
Other	4,154	4,847	8,891	13,482
Total	49,136	51,003	36,680	37,570
Total minus remittances	23,439	24,938	36,226	36,990

a. The village of Don Han.

b. The three survey villages combined.

c. Does not include loans to finance labor migration.

what is the effect of a migrant's absence on production and how much are incomes lowered as a result? The evidence from this study suggests that the economic costs of migration are far outweighed by the additional income generated and that the remittances from international contract labor migration largely augment, rather than merely replace, income earned on the farm. Of course, such a crude comparison of migrant and nonmigrant households may shield a great deal of complexity that lies hidden beneath the surface of the aggregated data. This would be especially true if, as Connell et al. (1976: 197) assert, those most likely to migrate are the "rather poor and the rather rich . . . rather than, in general, the very poorest, the middle or the very richest." Connell et al. maintain that, for the poor, labor migration is a survival strategy, whereas for the better-off it is a strategy of accumulation.[4]

However, even when the survey data from Baan Don Han is broken down into three categories according to size of landholding and income, there is nothing to indicate that the pattern deviates from that revealed in Table 5. Landholdings were similar in size for migrant and nonmigrant households, and the pattern of income distribution continues to support the contention that the poorer households in the village were more likely to engage in international labor migration (Table 6). The difference between the two groups, moreover, was statistically significant. There is also reason to believe that the income data for migrant households in Table 5 are slightly inflated because postmigration levels of income are used there to assess the characteristics that might have encouraged the households to migrate in the first place. Building an explanation *ex post facto* by reconstructing the past from the present not only distorts the premigration income level of migrants but also risks a circular argument.

The view that it is the poorer households who are more likely to work abroad is at odds with the received wisdom, which holds that although the poor may be "pushed" into migrating to Bangkok or to other rural areas in the search for work, they could never mobilize the funds to travel abroad. Nevertheless too much emphasis should not be placed upon such variables as size of landholding in the expectation that variations in land ownership will somehow shed light on the distribution of international migrant labor. In Northeastern Thailand the varying quality of the land, the complexity of tenurial relations, and the wide range of nonagricultural income activities make any link between wealth and landownership a tenuous one (Rigg 1988a).

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[4] This division of labor migration is sometimes reflected in the type of migration undertaken. Those who migrate as part of a survival strategy are often involved in rural-to-rural or rural-to-urban movements, whereas those who are able to accumulate funds are commonly international migrants.

Table 6. Distribution of landholdings and income, by migrant status of households: Baan Don Han

Measure	Migrant households	Nonmigrant households	Total
Landholdings, in rai			
0–15	7	8	15
16–30	9	4	13
31+	7	12	19
Total	23	24	E 47[a]
Income, in baht			
0–20,000	13	6	19
20,001–40,000	7	6	13
40,000+	3	12	15
Total	23	24	E 47[b]

a. Chi square = 3.29 (not significant).

b. Chi square = 7.93 (significant to 95%).

It may also be that relative concepts such as rich and poor do not necessarily apply in Tambon Don Han, and there are good reasons to suppose that general survey results may not be applicable to the particular communities under consideration here. Studies of seasonal labor migration from other rural communities to sugarcane estates (e.g., Panpiemras and Krusuansombat 1985) have found that it is difficult for farmers to save money, and for those who work in the fields it is a means of survival rather than of accumulation. By Northeastern standards, however, Tambon Don Han is wealthy,[5] and even its poorer households may have, or be able to mobilize, the resources to engage or work abroad. Labor migration to sugar-growing areas in Thailand holds few attractions to them as a possible source of employment and income generation. For example, when a group of them was asked whether they took seasonal work cutting sugarcane in Kampaeng Phet or in any other province, they laughed, replying that the wage was "only 25 baht a day" and no villager would consider working for such a pittance. Not one of the 129 respondents in my survey made any mention of such work, work that in some other Northeastern communities is the only means by which farmers can support themselves and their families through the long, unproductive dry season.

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[5] The average farm household income in the Northeast in 1982–83 was 11,494 baht (Thailand, MOAC 1987). In contrast, Baan Don Han, Noon Tun, and Sawaang Morodok had average annual household incomes in 1986–87 of 42,775, 29,372, and 41,403 baht, respectively.

Similarly, an agent in Bangkok explained that it was becoming increasingly difficult to recruit city dwellers to work abroad because of narrowing income differentials between international migrant workers and urban residents. In consequence his firm was relying increasingly on rural migrants, and especially upon those from the poor Northeast. He claimed that a paint sprayer working in a car assembly plant in Bangkok could earn between 6,000 and 10,000 baht per month; advertisements for paint sprayers to work in Saudi Arabia were offering 8,400 baht per month (Exhibit 1).

Although many poorer farmers in Tambon Don Han were able to engage in international labor migration, there were individual cases in which the lack of financial resources and social ties prevented migration. In Baan Don Han such an example was the household of Mr. Saay, who owned no land and had access to no funds, either directly or through relatives. Mr. Saay expressed the desire to work abroad but was unable to raise the cash necessary to pay for the flight and agent's fees. The household did have relatives in the village, but they may have felt that supporting Mr. Saay's family was too great a financial risk, and he was either unwilling or unable to borrow money from them. Households in Tambon Don Han do not have a duty-bound obligation to support their relatives, and most approached the issue of lending money in a business-like fashion. Besides Mr. Saay of Baan Don Han, there were also 15 respondents in Baan Noon Tun and Baan Sawaang Morodok who expressed a wish to work abroad but who, for various reasons, claimed that they were unable to do so. Nine of them said that they could not meet the necessary costs, of whom three households were indeed very poor, owning little or no land and earning an income barely sufficient to assure their subsistence. However, the other six respondents appeared, at least on paper, to be able to finance a work contract overseas. Their incomes were approximately equal to, or greater than, those of the migrants from Baan Don Han. Yet they professed to having insufficient funds. These men gave the impression that they lacked not the cash, but the contacts, information, and confidence, to search for and organize a job abroad. For example, one respondent from Baan Sawaang Morodok, who owned 26 rai (4.2 hectares) of land and had an income of more than 35,000 baht, when asked why he did not borrow money from a bank like so many in Baan Don Han, said that it was too "difficult" *(lambaak)*. Another farmer, who was living in Baan Noon Tan, said that he could not "afford" *(amnuay)* to secure a contract, meaning that he lacked the necessary resources in an informational or situational sense rather than in a monetary sense.

This rather extended discussion of the wealth characteristics of migrant and nonmigrant households has suggested the kinds of problems inherent in attempting to identify the two groups in Tambon Don Han. First, there are serious data difficulties in studies of migration that are not lon-

Exhibit 1. Advertisement for work in Saudi Arabia (from *Raeng Ngaan Thai*, 25–31 July 1988)

Apply Immediately
Work in Saudi Arabia

Position	Number [of workers]	Monthly wage (baht)
Construction foreman	2	12,600
Radio–T.V. repairman	4	8,400
Women's tailor	8	8,400
Men's tailor	4	8,400
Water supply engineer	5	7,700
Automobile electrician	4	8,400
Petrol engine repairman	7	8,400
Diesel engine repairman	8	8,400
Automobile radiator repairman	5	8,400
Automobile body repairman	7	8,400
Automobile paint sprayer	7	8,400
Motor electrician	5	8,400

Job Placement Agency K. S. Manpower Ltd.
9/173–4 Soi Laatphrao, 130 Khlongjan, Amphoe Bangkapi
Telephone 3780739, 3771651

gitudinal studies conducted both before and after migration. Second, there is the problem that many nonmigrant households are nonmigrant for the simple reason that they feel no need or desire to engage in labor migration. These households must be isolated from others who wish to be involved but lack the financial or informational resources. A related problem is that it is difficult to compare villages, even those located in close proximity to one another, because of their particularity, whereas a single community may not be representative of the wider picture. Moreover, to single out international labor migration as if it were the only solution to residents' problems in Tambon Don Han produces a simplistic picture of the range of opportunities open to households. Why one household should send a family member abroad and another should send one to work in Khon Kaen can rarely be understood from social and economic indicators alone. Finally, and related to this point, "wealth" in Tambon Don Han is not merely based on income and land. Power—expressed through contacts, information, and knowledge—is often far more important in determining who are the haves and the have-nots, in this case those who have worked abroad and those who have not.

What is easier than attempting to create an accurate picture of migrant and nonmigrant households is to identify the characteristics of the migrants themselves (Table 7). One feature of the migrants from Tambon Don Han is that they were invariably either married or intending to marry upon their return, unlike most labor migrants in other countries. (This tendency of Thai migrants to be married is also noted in other studies; see Table 1). Of the 33 migrants, 26 were married and two were engaged to be married, and labor migration appeared to be a means by which newly married couples could build up enough money to establish themselves with the necessities deemed to be important in the village. Singhanetra-Renard, working in Northern Thailand, has also noted the importance of this motivation. The largest group in her sample consisted of those migrants aiming to establish a new household and who needed to accumulate a sum of cash to meet the expenses of building a house and perhaps to pay for a lavish wedding ceremony (Singhanetra-Renard 1983:4). It may be that only when a man has the responsibilities (or the impending responsibilities) of marriage and fatherhood does he consider engaging in what may be fairly unattractive work several thousand miles from his home.

Internal and international migrants in my study evinced different attitudes. The motivation among many internal migrants seemed to be to "see the world," to experience life, and to have fun (often referred to by the rather loose term *bai thiaw,* to take a trip) rather than to accumulate funds, although in other villages internal migration may also be a survival strategy. As a result, even though an individual may have earned a decent wage, the proportion remitted was usually small, the migrant often being young and without responsibilities. In contrast, international migrants traveled for the specific purpose of accumulating savings. Another factor encouraging such young men to work abroad may have been that many lived within the households of fathers-in-law, where they had little control over farm decision making and were dependent upon the largesse of their wives' families. International migrant labor may thus represent a means to escape from a dependent relationship and an opportunity to build up resources of their own.

Table 7. Characteristics of international migrants from Tambon Don Han

Mean age	29
Sex (% male)	100
% married prior to migrating	79
Education (% primary only)	82
Occupation in Tambon Don Han	Farmers
Occupation abroad	
Unskilled[a] (%)	82
Semiskilled[b] (%)	18

a. Laborers and cleaners.

b. Drivers and electricians.

THE PROCESS OF MIGRATION

Securing a Contract

The majority of the migrants from Baan Don Han obtained work through job placement agencies located in Udon Thani or in Khon Kaen. Job brokers (*naay naa*, literally "front men," also sometimes referred to by the English term "broker") from the agencies would visit the village and with the permission of the headman advertise that they required a certain number of migrant workers. They would then go to the village at a later date to sign up those men who had decided to take the opportunity to work abroad. Although this was the general recruitment pattern, with the *naay naa* taking the initiative, some villagers in Baan Don Han took it upon themselves to travel to the job placement agencies to register their interest. One man who was more highly trained than most even wrote to a company in Bangkok inquiring about opportunities abroad.

The recruitment pattern for the eight international migrants from Baan Sawaang Morodok and the single migrant from Baan Noon Tun was rather more complicated. Job placement agencies in Bangkok, Khon Kaen, and Mahasarakham were used (the majority of them organizing work through agents in Bangkok), and more of the villagers contacted the agents themselves, by-passing the brokers. This diversity is explained by the fact that migration from the villages of Noon Tun and Sawaang Morodok was not common, especially in Noon Tun. Therefore no established pattern had evolved and prospective migrants took varied paths to obtain work overseas.

The lone migrant from Noon Tun was the only man who had ever traveled abroad to work, according to my informants. Mr. Nawon had been working in Bangkok during the dry season for five years when, with the encouragement and assistance of a friend in the city, he went to a job placement agency with which his friend was familiar. In this way he overcame the dearth of contacts in his home village and was able to exploit a new information network. The case of Mr. Nawon is an example of two-stage migration, in which only by first securing work in Bangkok was he able to find work overseas.

In contrast to Noon Tun, Don Han is well established as a point of departure for migrants, and a great number of households are involved. The method of securing a contract has evolved into a particular form that is familiar and well understood by villagers and is regarded as acceptably fair and safe.

Job placement agencies and the brokers who work with them find it hard to cover every village in their search for workers. They tend to visit the same communities, establishing a relationship based on familiarity and even trust with the inhabitants and in particular with those in positions of influence, such as the village headman. Because of this pattern of recruitment, villagers in the Northeast do not have equal opportunities to work abroad. Information networks are crucial, and even villages that are close to one another and with similar economic conditions may have very different levels of international labor migration (Singhanetra-Renard 1988:3–7).

Tambon Don Han is a case in point. In contrast to Baan Don Han, the neighboring communities of Baan Don Daeng and Baan Noon Tun have no tradition of international labor migration. It is noteworthy that Kyoto University's extensive and detailed study of Baan Don Daeng (Fukui, Kaida, and Kuchiba 1983, 1985) makes *no* mention of international labor migration and only a cursory reference to internal labor migration. This demonstrates how localized international labor migration may be: in Baan Don Han it directly influences 50 percent of the households and contributes 30 percent of total income, whereas in Baan Don Daeng, only half a kilometer away, it warrants no mention whatsoever.

The headmen of Baan Don Daeng and Ban Lao Nok Chum noted the importance of having some form of contact with a job placement agency. Without one, although it was still possible for a farmer like Mr. Nawon to work overseas, the difficulties of doing so were that much greater and had to be overcome by initiative or, in the case of Mr. Nawon, "luck." Reinforcing this view, a respondent in Baan Sawaang Morodok who said that her son-in-law wished to work in the Middle East, when asked why he did not, replied that he did not know a *phuu nam thaang* (guide).

In Tambon Don Han it appears that the most important determinant of variations in the incidence of international labor migration *between* villages is the presence or absence of contacts with job placement agencies. The view that contacts and relationships are central to understanding variations in recruitment is also noted by Fuller et al. (1985a, 1985b). Poapongsakorn and Sangthanapurk (1988), who examined temporary overseas labor migration from two villages in Udon Thani Province, Northeastern Thailand (Map 1), attest to the crucial role that information and the presence of a recruiting middleman played in facilitating the process. Although other inducements and barriers were also present, they were not sufficient to explain satisfactorily the pattern and incidence of migration in the area. Singhanetra-Renard (1988:7), in her study of a tambon in Udon Thani Province, reveals:

> Once one man had gone and succeeded, others—also frequently former [internal] labour migrants—from Chiang Wae began making the move. The lack of contact and less experience with contract labour in general by Ban Siap villagers, however, impeded their making the move. Returned Chiang Wae workers also became involved in the recruitment business as sub-agents, encouraging yet more movement from Chiang Wae.

In this way, international and indeed internal migration in Thailand often becomes location-specific and spatially self-perpetuating. Individuals rely on information and contacts from neighbors and friends. Except in those few cases where links or initiative extends beyond the bounds of the village, for example in the case of family ties, does this pattern become undermined.

Economic Activity and Networks

It was not only for overseas labor migration that access to information and contacts was important. In virtually all areas of economic activity it was possible to identify discrete networks of individuals and of information that facilitated involvement in each activity. Through these networks it is possible to reach an understanding of how the villages of Tambon Don Han came to specialize in particular activities. A few examples will suffice.

Some villagers from Don Daeng worked as laborers at the Northeast Regional Agricultural Office at Tha Phra (Map 2). When the farmers of Don Han were asked why they did not also work there, they replied that it was extremely difficult to obtain such work. If any jobs did arise, they explained, jobs always went to villagers in Don Daeng because they had very close links with the Agricultural Office and therefore had the first option on any newly available work. In Baan Noon Tun 14 of the households interviewed (25 percent) cultivated vegetables for sale. In Baan Don Han only one household did so. Further questioning revealed that a man was living in Baan Noon Tun who had set himself up as a trader *(phor khaa)* and who purchased the vegetables and then transported them to the market in Khon Kaen. Ten of the 14 households supplied vegetables to him. Some villagers were even beginning to market their produce themselves, and the scale of cultivation had also attracted buyers from other towns. In Baan Noon Tun

11 of the households interviewed had one or more family members working as construction workers *(ko saang)* in Khon Kaen, mostly during the dry season. Most of these men found work through another villager who had set himself up as contractor *(phuu rap mao)* and who provided labor for construction companies in the provincial capital. In Baan Don Han and Sawaang Morodok none of those interviewed was engaged in such work. Again in Baan Noon Tun, it was reported that some 18–20 young women worked in two Taiwanese-owned leather factories located in Samut Prakan (Map 1), to the south of Bangkok. It was said that a close relationship existed between the two factories and the village, and it was even claimed that one of the companies had made a contribution to the village temple *(wat)*. This relationship was beneficial to both parties: the villagers obtained work in an environment and at a rate that was known and acceptable, while the two factories had access to a pool of labor whose quality and stability were more assured than if they had come from some unknown source. (In Marxist terms, they could also be paid at a rate less than the costs of reproduction; see Wolpe 1972). Finally, 15 of the households interviewed (39 percent) in Baan Sawaang Morodok raised horses for sale, whereas only three (3 percent) did so in the other two survey villages. Although the horses are now sold to a variety of traders, crucial in the evolution of this particular activity appeared to be Mongkol Farm, located on the outskirts of the village. This farm sells young horses to farmers in Baan Sawaang Morodok and then buys them back when they have reached maturity, whereupon the horses are taken to Bangkok, Chiangmai, and other towns for sale.

Evidence from elsewhere in Thailand shows that this specialization of economic activities in villages is a general trait of the economic organization of the country. With regard to labor migration, it causes villagers to become "migration specific," establishing links with certain towns, factories, and agents with the result that a particular pattern of migration (particular both in type and location) evolves. Ekachai (1988b:36), who visited the village of Don Samran in province of Roiet, Northeastern Thailand, at the beginning of 1988, describes the way in which migrants from the village had formed a guild of workers in Bangkok:

> From among its yellow seas of dry ricefields, Baan Don Samran, like other Northeastern villages, sends its migrant workers to the same occupations in Bangkok, like a sort of transplanted village guild. Theirs is a village of poultry slaughterers and of tuk-tuk drivers [a tuk-tuk is a three-wheeled motorized taxi] who with time and experience will promote themselves to the status of taxi drivers. . . . When in Bangkok, the drivers will stay in the same place, renting houses together. Baan Don Samran villagers base themselves near Wat Nuan Khae.

It is also clear that access to information alone often is not enough to secure employment, be it in Khon Kaen, Bangkok, or abroad. A distinction needs to be made between "information" and "contacts." Most of the few past studies of seasonal employment and labor migration that have noted the importance of information in understanding variations in the incidence of migration have failed to make a distinction between information in itself, and information that can actually be acted upon (exceptions are Fuller et al. 1985a, 1985b). The farmers of Baan Don Han knew that occasionally there was work to be had at the Northeast Regional Agricultural Office at Tha Phra—they had that information—but they were largely excluded from gaining access to employment there. Likewise, farmers in many villages knew that it was possible to engage in international labor migration, but their lack of a direct and fruitful contact with a job placement agency (through a *naay naa*) made securing work far more difficult. Panpiemras and Krusuansombat (1985:333), although they do not explicitly note this difference, imply that it exists in the following passage from their study of seasonal employment in Thailand: "Our study found information to be the most important determinant of the distance of migration. That is, the distance of the individual migrant's decision within the modern agricultural sector *depended upon direct contact (and transport)* [emphasis added] from the village by the employers or on contact with middlemen, friends and village leaders."

Other studies similarly imply that information needs to be reinforced by some form of introductory contact. A recent investigation conducted in Phu Wiang watershed (Map 1), Khon Kaen Province, for example, makes reference to this need for contact among villagers obtaining work in a local reforestation project and selling sugar to sugar mills:

> Informants report, however, that employment at the [reforestation] project is not open but dependent on connections with the employees already in place (SUAN 1987:24).
>
> Sugar mills purchase on a quota basis and through a fairly closed network of suppliers. Farmers without proper contact are unable to sell directly to mills, particularly if the crop bulk is small (SUAN 1987:32).

I have dwelled on this issue of information and contacts because it seems to me to be central to an understanding of the patterns of migration in Thailand. It suggests that we should be looking not at such criteria as income characteristics for an explanation of migration behavior but rather at the networks of relationships that exist among farmers, villages, agents, and companies. Nevertheless, it is fair to ask whether such relationships are really so unusual. In developed countries sons follow their fathers into the same factories, prestigious university places become strangely available to those with "connections," and the "old-boy" network still plays a role in securing employment. The difference is that in rural areas of Thailand the influence of contacts is often far more extreme. Villages may have their entire dry-season employment centered on a single activity, even in a single factory. Information and knowledge in rural areas are far scarcer resources than in many developed countries, and a more explicit patron-client system operates (Singhanetra-Renard 1988:13). This very fact means that the ties between villages and factories or agents occur seemingly without reason or rationale. Why should Baan Noon Tun have ties to Taiwanese leather factories several hundred miles away in Samut Prakan? Is the cause geographical proximity, skills? At the level at which most economic surveys are conducted, little light would be shed on these questions.[6]

Costs of Migration

Exhibit 2 is an example of the type of contract signed by Thai villagers who have decided to work abroad. This contract appears to meet the requirements of the Department of Labour, but in many instances workers have been cheated by unscrupulous job placement agencies and tricksters (Pongsapich 1988; Poapongsakorn and Sangthanapurk 1988). Occasionally the jobs that workers have signed up for are found to be "unavailable" and the migrant must accept work at a lower salary; sometimes the job placement agencies send people who do not meet the skill requirements of the firm employing them; in others the broker disappears after extracting a substantial fee; sometimes the conditions in the country of employment are found not to conform with those stipulated in the contract; but the most common complaint, usually made by those researching the issue rather than by the migrants themselves, is that the fees charged by the job placement agencies are excessive (Bunnag and Chaimusig 1987:196–198; Tosurat et al. 1987:227–228; Rungcheewin et al. 1983:258–259).

Of those migrants I interviewed in Tambon Don Han, only two had serious complaints. Mr. Udom, who had signed a contract to work for two years in Saudi Arabia as a laborer, was told upon arrival that work was available for only a single year, after which he would have to return to Thailand. During the 12 months he spent in Saudi Arabia he managed to save 48,000 baht, but most of this was needed to repay a loan of 35,000 baht that he had obtained from the Thai Farmers Bank (at an annual rate of interest of 19.2 percent). Together with the lost agricultural production and

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[6] Scholars of China have noted the overriding importance of special relationships (*guanxi*) in explaining patterns of economic activity in that country. They have found that it is not levels of income which determine levels of consumption, but whether people have the necessary *guanxi*. During Mao Zedong's Chairmanship, for example, it was by being a member of the Chinese Communist Party that individuals could secure for themselves a large apartment, new consumer goods, culinary delicacies, conference outings, and prestige postings—not by earning a higher income. (See Liang and Shapiro 1984 for a very readable account of growing up in China during the Cultural Revolution and the importance of having the right political connections.)

Exhibit 2. Employment contract for work in Saudi Arabia

Memorandum of agreement made between Abdulla B. Al-Khalifa Company hereinafter called the Employer of the first party and Mr. .... hereinafter called the Employee of the second party whereby it is agreed as follows:

1. The employee hereby agrees to serve employer as .... [work description].

2. The employee shall receive salary at rate of SR. .... per month on the basis of Foreign AC Calendar, inclusive of local government taxes.

3. Employee shall work 8 hours per day as normal working hours which will be designated by the employer. At the option of the employer a 10 hour day will be worked with overtime paid according to Saudi Labor Law.

4. Employee will be under probationary period for 3 months. Both parties have right to cancel this agreement without notice or benefits during this probationary period. Otherwise it will be effective between the two parties according to Saudi Labor Law.

5. Upon completion of two years service employee shall be entitled to 30 days leave with pay. The employer has the right to postpone the vacation.

6. The employer hereby agrees to arrange the accommodation for the employees at the Camp living quarters or apartment building with necessary furnitures. Foods will be provided by the employer.

7. The medical facilities will be provided by the employer to the employees at no cost. The normal routine medical treatment which would be managed in the office by the medics of the house and the hospital will carry out for more involved treatment.

8. The economy class airfare from the country of origin to Saudi Arabia will be provided by the employer and upon confirmation of this contract the employee will be supplied the return ticket from the employer.

9. This agreement is effective from .... for a period of 2 years. Termination for just cause or for lack of work will void this agreement.

Both parties of this agreement have set their respective hands on the day and the year first mentioned above.

Employee ....

Employer ....

increased labor costs associated with his absence, this meant that Mr. Udom barely broke even. The other case of a disappointing sojourn abroad involved Mr. Prem's son-in-law, Mek. Mek had obtained a contract to work as a laborer in Dubai, but had returned home ahead of schedule, after only ten months. His father-in-law explained that the work foreman was a wicked man *(khon raay)* and Mek had become embroiled in a dispute with him. He consequently feared for his life and decided to break his contract and return home. As the costs of securing the work amounted to 45,000 baht (financed with a loan of 35,000 baht from the Thai Farmers Bank), and Mek had managed to save only 50,000 baht, he too only just covered his costs.

In these two examples the strategy of international labor migration for the purpose of accumulation was not successful. Nevertheless, the two men's experiences were exceptions, and the great majority of migrants from Tambon Don Han had no complaints. Mr. Udom was even looking for another opportunity to work abroad in the near future. Mr. Prem, when asked what he thought about working abroad, replied that although it was unfortunate that his son-in-law had got on the wrong side of his overseer, Mr. Prem still viewed international labor migration as beneficial to the individual and the community.

All except two of the migrants from Tambon Don Han had obtained work in the Middle East, and the great majority of these in Saudi Arabia. The exceptions were two men who had gone to Kuwait and one each who had gone to Dubai, Singapore, and Bangladesh. This geographical distribution, with the preponderance of migrants working in the Middle East and particularly in Saudi Arabia, corresponds closely with the national pattern (Table 1). The average cost to the migrant of obtaining work overseas amounted to 36,662 baht, which included the agent's fees and the cost of the flight, visa, medical examination, and skills test. This figure is similar to that recorded in other recent surveys (Table 1). In 28 out of 33 cases, migrants were unable to meet the costs of migration from their own resources and had to secure loans. The loans averaged 32,286 baht, with interest rates ranging from zero to 60 percent per year.

It is frequently stated that this high cost of obtaining work abroad, coupled with the necessity, in many cases, of securing loans, restricts migration to wealthier villagers. As I have already shown, however, this generalization did not hold true among households I interviewed in Tambon Don Han. Further, I found no evidence that the granting of loans by institutional sources of credit was restricted to richer families. Of those households with members who had worked overseas, 27 had borrowed money (one twice). Eighteen of the 28 loans had been obtained from banks, most of them from the Thai Farmers Bank, and the remainder from the Bangkok Bank and the Thai Army Bank. The other 10 loans were from a variety of informal sources: seven from relatives, usually at attractive rates of interest (three with no interest whatsoever), and three from moneylenders, in each case at a monthly interest rate of 5 percent. An analysis of the characteristics of those who had managed to obtain funds from institutional and noninstitutional sources reveals little, and I found no statistical relationship between the borrowing of money and either income or size of landholding. The most interesting aspects of the analysis were the extent to which farmers used banks and the amount of cooperation between related households.

The high level of involvement of farmers in the formal financial sector is undoubtedly in part a reflection of the relative wealth of Baan Don Han and the good communication links that the village has with Khon Kaen. The long experience of the community with international labor migration also helps to explain the degree of institutional borrowing. Farmers appreciate the services that banks can provide and understand the requirements necessary to borrow money. They are therefore able to exploit that resource fully. This may seem a fairly insubstantial point to make. However, in many areas of Thailand, one of the principal reasons for the lack of institutional borrowing is the failure of farmers to understand the requirements and the operation of banks. Because many farmers are unfamiliar with and apprehensive about banking, they will continue to obtain funds from middlemen, merchants, and other informal credit sources. In Baan Don Han, for example, only two of the 24 migrants resorted to borrowing money at what may be viewed as an exorbitant rate of interest (60 percent)—one from a Chinese moneylender *(naay tun)* and another from his aunt. However, in Baan Noon Tun and Baan Sawaang Morodok, three of the eight migrants did so (all also at 60 percent). In these two villages the borrowing of money from institutional sources was less commonplace and less well understood. In Baan Don Han, 38 percent of the households interviewed had borrowed money from formal credit sources; in Baan Sawaang Morodok and Baan Noon Tun the figure was 15 percent. Further, the majority of those in Baan Sawaang Morodok and Baan Noon Tun had obtained loans from the local cooperative and only five had gone to commercial banks. In explaining his reluctance to secure loans from a commercial bank, one farmer from Baan Sawaang Morodok stated that it was complicated, difficult, and troublesome *(yung yaak)*.

Another point worth emphasizing is the degree to which related households will offer help to one another. Where collateral in the form of land is not available to a family, loans are occasionally guaranteed using another family's land. A reciprocal and often hidden element is usually involved in such transactions. For example, Mr. Samak, who had lent his brother 10,000 baht, received the use of 12 rai (1.9 hectares) of upland from his brother. Although the link between the two acts of generosity was not explicit, this sort of tradeoff appears to be fairly common. In the case of Mr.

Samak and his brother, the arrangement was satisfactory to both: the brother obtained a loan easily and cheaply (his absence would have made farming the land he lent to Mr. Samak impossible without the hiring of labor), and Mr. Samak welcomed the chance to farm more land. Studies of community relations commonly stress the importance of examining the local economy anthropologically—that is, looking for the social and the cultural clues to behavior that may underlie the economic transactions. Conversely, it is also important to root out the economic motivations that underlie social arrangements. There exist layers of explanation, and in the final analysis transactions—even between relatives—involve reciprocity and are businesslike (i.e., economic) in their outcome. To discover this does not always require a great deal of investigative work on the part of the researcher; in Tambon Don Han one relative lent a migrant 40,000 baht at the going market rate of 5 percent per month.

Job Placement Agencies and Their Methods

In addition to asking the migrants themselves how they looked for and obtained work abroad, I interviewed five job placement agencies in Bangkok about their methods of recruiting migrant workers. Although a survey of five such companies can hardly be claimed to be representative of the estimated 300 that operate in Thailand, the responses do add flesh to the picture of international labor migration that has been sketched. It also widens the perspective, as the inhabitants of Tambon Don Han have a restricted view of what is occurring.

None of the companies interviewed claimed to employ people to search actively for prospective migrants. Migrants came to them through one of four avenues—through their own initiative, through word of mouth, through independent brokers or middlemen, and through "front men" *(naay naa)* having more formal links with job placement agencies.

Job placement agencies advertise in Thai language newspapers such as *Raeng Ngaan Thai* (Thai Labour) and *Baan Muang* (The Country), and some individuals come to the agencies in response to these advertisements (Exhibit 1). Agency representatives said that these migrants tended to be more highly skilled and educated than others.

Word-of-mouth recruitment is more common, and the agencies visited stated that it was very important in attracting workers. As in the case of Mr. Nawon, information about a particular agency would be disseminated through friends and relatives.

Brokers, most of them working independently of the agents, also find prospective migrants and are paid a fee by the worker (estimated to be 5,000–10,000 baht). They may also have informal links with job placement agencies. These connections vary in degree of closeness with the agencies; sometimes the agencies do not even know that an applicant has come through a broker. The agents said that these brokers sometimes charged exorbitant fees for doing little for their clients, were the cause of many of the complaints regarding migration, and were generally bad for the business. They also thought that with better knowledge about international contract labor available to prospective migrants, brokers were gradually being marginalized. Nevertheless, some agencies still rely heavily on them as a source of migrant workers; figures ranging from 5 to 75 percent were given. I was also told that it was generally the unskilled and poorly educated farmers from the more remote areas of Thailand who used brokers and had to pay brokers' additional fees, and that it was just those migrants who found it hardest to meet the costs involved and who received the lowest salaries.

Using front men having more formal links with job placement agencies appeared to be the most prevalent method of recruitment in Tambon Don Han. But the distinction between a broker and a front man is a fine one, a front man on commission being no more than a broker with close links to a particular job placement agency.

On signing up with an agency, a migrant is given a skills test which costs 200–500 baht, and a medical test which costs 500–1,000 baht. Skills certificates are obtained either from the Department of Labour or from an approved center. To be registered for legal migration, workers also have to be approved by the Department of Labour, after which they are required by the authorities to enroll in a one-day orientation course costing 300 baht. As the *Thai Manpower Guide* (Thailand, Department of Labour, n.d.:58) explains: "When the Department of Labour has approved the workers to be sent, the employment agency shall bring the selected workers for the predeparture orientation training by the officials to inform the workers of their rights and how to behave while abroad, such as the laws, customs and tradition, religion and culture of the host country."

The need to take these various tests and to register with the job placement agency may require that the prospective migrants make several trips to Bangkok. Although total costs to the migrant vary, the figures given by the workers from Tambon Don Han (30,000–40,000 baht) were confirmed by the agencies to be realistic. They do not, however, include the value of the time spent arranging the contract or the cost of traveling to Bangkok and staying in the city. Not surprisingly, the agents were reticent about revealing their own profit margins, but one said that their costs averaged approximately 25,000 baht per contract, leaving a profit of between 5,000 and 15,000 baht.

THE TIME AWAY AND THE RETURN HOME

Having secured a contract and obtained, if necessary, a loan to pay for it, the migrant leaves the country, commonly for two years (the average period away is 21.2 months), possibly returning once during that period to visit his family. The absence of the migrant, and especially if he is the household head or effective household head, can have serious implications for the family, both socially and economically.

Social Implications

It is commonly asserted that international labor migration contributes to family dissolution, child truancy, rising suicide rates, extramarital affairs, and the breakdown of traditional cultural relations and norms (e.g., Gogate 1986; Pongsapich 1988; Pitayanon 1986; Gilani 1986; Go and Postrado 1986; Abbasi and Irfan 1986). Except for those changes that were part of the wider development process, this study found no substantive evidence in Tambon Don Han that international migration was having such negative social effects. Admittedly, the research was not directed at revealing these social implications of migration, and some negative consequences may have been overlooked, sensitive as many of the issues are. Pongsapich (1988) reports that cases of adultery and even of murder are widely known, and that some migrants ensure that their wives do not have access to their savings for fear that the savings will be squandered. One respondent in Baan Sawaang Morodok said that her daughter was not receiving any remittances from her husband because he did not trust her, and another reported that the migrant was sending his remittance checks to his mother rather than to his wife. Nevertheless, the research did not indicate that these negative social phenomena had received a significant boost from migrants' absence from their families. The high profile that cases of adultery (and of murder connected with it) attain tends to exaggerate their prevalence. Rumor and scandal spread rapidly, and most villagers will have heard stories of truancy, suicide, adultery, and divorce.

One reason why families appeared to be socially little affected by the migration of male adults was the stabilizing and supporting influence of relatives. Wives were never left to manage their affairs alone and were rarely short of assistance. As has already been mentioned, husbands in the Northeastern region commonly move into their wives' households so that the father-in-law of the migrant can readily fill the role of family head. Thirteen of the 33 migrants had made this arrangement. The families of the 16 migrants who were household heads themselves faced greater challenges, but they could call on help from various quarters. The sort of situation described in some studies of international migration (e.g., Palmer 1985), in which wives are left to fend for themselves, did not occur. It is possible to make a broad distinction between women in nuclear households, who appear to face often severe problems during their husbands' migration, and those in extended households, who can call on support from relatives. Go and Postrado (1986:127–128) and Gulati (1986:202–205), in their studies of migration in the Philippines and India respectively, likewise place considerable emphasis upon the supporting role that family networks play while migrants are overseas. In Tambon Don Han the ease with which family life continued during the period of migration undoubtedly not only reduced the incidence of negative social phenomena, but also meant that in many cases few additional responsibilities fell to the women left behind. In this sense, international labor migration was not a force for social change as has been reported, for example, in India (Gogate 1986; Gulati 1986). The wives of Thai migrants whom I interviewed were actually keen to have their husbands take up work abroad, and many gave me the impression that they were more enthusiastic about the prospect than their husbands.

Economic Implications

More apparent and more serious than the social consequences of migration was the economic impact of a migrant's absence. Of the 32 households involved in international labor migration, 21 (66 percent) complained of experiencing agricultural labor shortages. These shortages were combated in a variety of ways.

The most common solution, mentioned by 12 of the 21 households, was to hire additional labor to meet the shortage. As Tambon Don Han is located in an area where land is becoming a resource in short supply, labor was freely available. Indeed, for many of the land-poor and landless households in the village, the availability of wage labor was an important, and in some cases their only, source of income.

Less common as a means of overcoming labor shortages was the use of labor-saving machinery, although on upland (cassava) fields mechanical land preparation was already widespread among both migrant and nonmigrant households. A handful of farmers used rotavators to prepare their rice padis, but the extreme variability of production due to limitations on rice cultivation in the area meant that farmers tried to keep to a minimum their cash investments in chemical fertilizers, pesticides, and the hiring of machinery.

Households also remedied or alleviated the problems of labor shortages by calling on assistance from relatives (five households) or simply by working harder (nine households). Other studies of temporary labor migration in Thailand (e.g., Onchan 1985:472) have noted that labor "shortages" may stimulate households to improve the allocative efficiency of the labor available, with the result that there may be no reduction in overall output. Some farm households in Tambon Don Han appeared able to maintain production at previous levels, partly through farming more efficiently.

Another group of farmers met their labor shortages by reducing the area of land they cultivated or by cultivating it less rigorously. This approach is of great interest as some studies of international labor migration have shown how the process can undermine the very fabric of the agricultural economy (e.g., Birks 1985; Serageldin et al. 1983). In the case of Tambon Don Han, the situation was much less serious, and there was no evidence that land had been taken out of production as a direct result of labor shortages caused by migration. Nevertheless, two farmers said that rather than going to the expense of hiring additional labor to make up the shortfall, they were farming their land less intensively. What was more common was lending or renting land to another household during a migrant's absence (see also Singhanetra-Renard 1983:16–18); this occurred in seven of the 32 cases (22 percent). Farmers explained that such a temporary transfer of land suited their purposes, given the labor shortages they were experiencing. In most cases the land was rented or lent to, or sharecropped by, a relative. When Mr. Akin went to Saudi Arabia in 1985, the 39 rai (6.2 hectares) of riceland he owned was given to his brother-in-law on a 50:50 sharecropping basis. This arrangement was advantageous to both parties.

The impact of labor shortages on production as a result of young men leaving to work abroad needs to be viewed from two perspectives—from the perspective of the individual household, and from that of the community. (If this were a geographically more extensive study, the effect at the regional and national levels would also be of interest.) From the perspective of the household, labor migration can have a great effect upon agricultural output. In their study of Thai labor migration, for example, Poapongsakorn and Sangthanapurk (1988:66), report that "at least 28 migrant households or 36.8% of total migrant families have faced a decline in their [agricultural] production due to the lack of labor after they had sent their members to work overseas. Of these households, twelve or 42.9% completely stopped their production activity."

But this is not to imply that large areas of land are left uncultivated—which is the situation in Malaysia, where some 810,000 hectares (two million acres) of agricultural land in the smallholder sector have been left idle due to rural-to-urban migration (Stahl 1984; Courtenay 1987). In Poapongsakorn and Sangthanapurk's study, 10 of the 12 households who stopped their production altogether rented their land to others (as in this survey of Tambon Don Han). Thus, although labor migration radically reduced output at the household level, the reduction at the community level was negligible. Further, in the marginal environment of Northeastern Thailand, there are distinct problems of separating the effects of labor migration from those that are linked to variations in environmental conditions from year to year. That 34 percent of riceland in Tambon Don Han was unplanted was due not to labor shortages, but rather to insufficient rainfall.

During a migrant's absence, remittances begin to flow back to the family. Although two or three months may elapse after a migrant leaves and before the first remittance check arrives, the delay did not seem to cause undue hardship to the families I surveyed, probably because of the relative wealth of the tambon and the level of assistance that families received from their relatives. In every case, from the receipt of the first remittance check onward, funds arrived at regular monthly intervals, amounting to an average remittance of 5,667 baht per month. This flow of funds ameliorated some of the problems faced by those left behind. It provided cash for hiring workers to meet any labor shortages that might occur. It also enabled the migrants' families to pay off promptly the debts incurred to finance the migration, something that was accorded high priority. Households having such debts reported that they had been able to repay them after an average of 10.4 months, and the longest length of time a loan was outstanding was only 24 months. Some of those debts were quite substantial.[7] The funds remitted were also used to meet day-to-day expenses and any emergencies that might arise. Although wives, mothers, or fathers-in-law might occasionally spend substantial sums while the migrant was absent, this was rare. When it did occur, it appeared to be with the permission, and under the direction, of the migrant. In most cases, the money was saved and decisions on how to use the funds delayed until the migrant's return.

Returning Migrants

When the migrants had completed their contracts in the Middle East, they returned to their villages and were readily and easily reintegrated into village life. Although all of those surveyed sent a portion of their income home each month, many also brought home with them large sums of cash and goods of considerable value. Most popular were radio cassette recorders, although migrants also returned with watches, calculators, television sets and even video recorders. As Table 8 shows, migrants brought with them an average of 13,129 baht in cash and goods valued at 4,868 baht. By the time a migrant had completed his tour, he had accumulated goods and cash amounting to 116,424 baht. This represents four times the average annual income of a household in Northeastern Thailand in 1986 (Thailand, NSO 1987:79), or more than ten times the annual cash income of a farming household in the region in 1982–83 (Thailand, MOAC 1987:220). Even after the costs of securing the contract (agent's fees, flight, etc.) are taken into account, a migrant's earnings were still seven times the second of these two income estimates, or four times the sum a migrant saved each year. Given that in most cases the absence of the migrant resulted in only a marginal

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[7] If migrant households with loans spent all of their remittances on the repayment of loans, it would take approximately 6.3 months before they had cleared their debts and could begin to accumulate funds. This calculation does not take account of the increased costs and the loss of income incurred during the migrant's absence.

Table 8. Income generation among international migrant laborers from Tambon Don Han

Item	Income Returned migrants	Income Absent migrants
Income remitted per month	5,100	6,800
Total remittances or expected total	98,427	190,909
Value of goods brought back	4,868	na
Cash brought back	13,129	na
Total value of goods and cash brought back	17,997	na
Total accumulated income[a]	116,424	u
Sample size	22	11

na—not applicable.

u—unavailable.

a. For comparison, cash farm income in the Northeastern region during crop year 1982–83 was 11,494 baht (Thailand, MOAC 1987:220). Average household income in the Northeastern region in 1986 was 29,592 baht (Thailand, NSO 1987:79).

decline in farm and nonfarm output, these earnings represent a considerable boost to household income. One of the major questions, if not the most important question, of concern to those investigating international labor migration is how this money is spent.

PATTERNS OF EXPENDITURE AND INVESTMENT

On average, international migrants from Tambon Don Han who had finished their contracts spent 4.1 percent of their accumulated funds on their children's education, 9.4 percent on house construction and improvement, 15.0 percent on consumer durables (electrical goods, motorcycles, bicycles, etc.), 15.1 percent on agricultural investments, and the largest share, 34.4 percent, on the repayment of loans (Table 9). In addition, 19.3 percent of the accumulated income was saved. Those households with migrants still absent similarly reported a high percentage of funds being directed toward loan repayment; and the general pattern of expenditure was similar, although larger sums were being saved and being used to meet day-to-day expenses. The higher rate of saving reflects the fact that decisions regarding expenditure were being delayed until the migrant's return, whereas the large outlays on day-to-day expenses must have been due to the immediacy of having to support the family while the household head (or other adult male) was away. Among households of returned migrants, however, day-to-day expenses were seldom mentioned. Another difference was that,

Table 9. Use of funds generated through international migrant labor: Tambon Don Han

	Amount of funds, in baht	
Use	Returnee households	Absent migrant households
Loan repayment	29,336	33,632
Savings	16,436	27,879
Agriculture		
Land	10,682	9,091
Land improvement	727	182
Agricultural mechanization	0	2,727
Livestock	1,186	0
Fishponds	318	0
Total agricultural expenditure	12,913	12,000
Establishing a business	1,341	0
Education	3,530	1,386
House construction	3,636	10,000
House improvement	4,341	5,456
Television or video	4,814	5,673
Tape recorder	3,984	1,536
Bicycle	332	600
Motorcycle or pickup truck	3,636	0
Day-to-day expenses	227	9,932
Hospital fees	182	0
Other	611	0
Total funds used	85,320	108,094
Total minus savings	68,884	80,215
Total minus savings and loan payments	39,548	46,583
Sample size	22	11

whereas it was usually the wife who answered questions while the migrant was away, it was the migrant himself who did so after he had returned—and he, of course, had no direct knowledge of the household's experiences during his absence.

Consumption versus Production

Many studies have divided expenditures into two categories, productive and consumptive (ESCAP Secretariat 1983:4; World Bank 1981:67, 127–38; Chandavarkar 1980:38–39; Macmillan 1982:262–266). On that basis (but excluding savings), Table 9 indicates that returnee migrant households from

Baan Don Han spent, on average, 78.4 percent of their funds on consumption and 21.6 percent on productive investment.[8] Using such figures as these, many studies argue that international migrant labor does little to develop a community because most of the funds earned abroad are directed toward wasteful, consumptive expenditure. Such analysis, however, is grossly oversimplified and does not give a true picture of the uses to which funds are put. For example, although education is usually classified as consumption, it is clearly an investment in human capital. Likewise, house construction and improvement, which are a popular form of expenditure among international migrants in all countries, often result in improved living standards (e.g., through improved sanitation). Given the emphasis in development since the 1970s upon meeting basic needs—of which adequate shelter and education are two elements—it seems peculiar to regard housing and education as forms of consumption. Some studies even viewed the purchase of land as consumptive because, in itself, land does nothing to raise agricultural output for the community as a whole. In my view it is necessary to use a broader definition of productive investment and to place the pattern of expenditure within the local economic context.

Agricultural Expenditure

What is particularly striking about the pattern of expenditure among the migrant households of Tambon Don Han is the low level of investment in agriculture, particularly in investment directed at raising yields. Among returnee households the average expenditure on agriculture was 18.8 percent. But much of this, 82.7 percent, was used to purchase land and less than 6 percent was aimed specifically at increasing crop yields (through the leveling of rice padis). Of the remaining agricultural expenditure, 9.2 percent was spent purchasing livestock and 2.5 percent was spent by two farmers who had dug fish ponds on their lower padiland. Among those migrants who were still working in the Middle East, one had instructed his family to buy a secondhand tractor, which was being hired out to plough other farmers' upland at the rate of 90 baht per rai (563 baht per hectare). However, assigning the income generated through migrant laboring to particular types of expenditure in this manner is unsatisfactory and should be done only with caution. As has been emphasized many times before, when agriculture is a way of life—which it remains in the villages of Tambon Don Han—rather than a business, the attempt to link income and expenditure is often futile. Farmers have little idea what percentage of their income is directed toward the purchase of fertilizers, pesticides, or the hire of labor. In the households studied here, it was only in those cases where large sums of money were spent, for example on the purchase of the tractor, that the amount spent for specific purposes could be calculated.

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[8] Only returnee households are discussed owing to the special factors that influence expenditure patterns among households with migrants still absent. Consumptive expenditures in Table 9 include loan repayment, education, house construction and improvement, purchase of consumer goods, day-to-day expenses, and hospital fees. The discussion of the pattern of expenditure does not include savings.

Some studies try to circumvent this problem of "sourcing" the expenditures by simply comparing the levels of agricultural investment among migrant and nonmigrant households. Doing this for the three survey villages, using levels of fertilizer and hired labor (the major areas of expenditure) as well as total cash inputs, reveals little difference between the two groups (Table 10). From this it may seem plausible to argue that income from international labor migration is not being invested in agriculture and therefore that it is not being used productively. But this sort of comparison suffers from several drawbacks. First, there is the problem, mentioned earlier, of reconstructing conditions prior to migration. Were migrant households poorer than the average before one of their members traveled abroad to work? If so, they may have raised their level of agricultural investment to the village norm. It is extremely difficult to guess at the base lines from which we are building our hypotheses. The second problem, and one that is particularly pertinent to Northeastern Thailand, is that there is a common assumption that investment in agriculture is a sensible way of disposing of the income generated. My argument here is that the lack of investment in agriculture by migrant and nonmigrant households merely reflects the absence of productive opportunities in the agricultural sector. Although farmers in Tambon Don Han were willing to spend considerable sums of money to purchase additional land (if it was available) and thereby to extensify production, they were extremely reluctant to invest funds in the intensification of production. Given the risks of cultivation, and in particular rice cultivation, this stance was eminently sensible.

That farmers adopted different investment strategies depending upon whether they were cultivating rice or cassava illustrates this point, for it shows that given the right conditions, farmers are willing to invest in agriculture. On average, farmers with upland invested 4,793 baht (339 baht per rai, 2,119 baht per hectare) in the cultivation of cassava, whereas those with riceland spent only 366 baht (30 baht per rai, 188 baht per hectare). The higher level of investment in cassava cultivation reflects the greater stability of return from the crop. Farmers growing cassava could be fairly confident that increased investment in chemical fertilizers and other cash inputs would be reflected in higher yields (Figure 2). On their ricelands however, even with careful management there was a high probability that the output achieved would not warrant the investment made (Figure 3). This is not to say that investment in cassava has no ceiling. Farmers must make decisions in the face of widely fluctuating market prices, exemplified by

Table 10. Fertilizer and labor use for rice and cassava production among migrant and nonmigrant households: Tambon Don Han

Crop and type of input	Migrant households	Nonmigrant households
Rice		
Total fertilizer use, baht/household	44	20
Fertilizer use, baht/rai (baht/ha)	3.7 (23)	1.5 (9)
Total labor use, baht/household	138	195
Labor use, baht/rai (baht/ha)	12 (75)	15 (94)
Total cash inputs,[a] baht	441	361
Total cash inputs,[a] baht/rai (baht/ha)	38 (238)	28 (175)
Cassava		
Total fertilizer use, baht/household	1,210	1,665
Fertilizer use, baht/rai (baht/ha)	78 (488)	123 (769)
Total labor use, baht/household	2,080	2,025
Labor use, baht/rai (baht/ha)	134 (838)	150 (938)
Total cash inputs,[a] baht	4,715	4,826
Total cash inputs,a baht/rai (baht/ha)	303 (1,894)	357 (2,231)

Note: Expenditures were made during a single crop year—in 1986–87 in Baan Don Han and in 1987–88 in the other two villages.

a. Includes the cost of hiring labor and machinery and the purchase of fertilizers and pesticides.

the fact that in 1986–87 they were receiving an average of 0.94 baht per kilogram of raw root, whereas in 1987–88 the figure declined by 21 percent to 0.74 baht per kilogram. This uncertainty of return may help to explain why, even given a surfeit of available cash, migrant households were willing to invest no more than nonmigrants in the cultivation of cassava (4,904 baht versus 4,744 baht, respectively, or 303 baht and 357 baht per rai). In Tambon Don Han the relative wealth of nonmigrants meant that they too were able to reach this investment ceiling, even in the absence of additional remitted income.

Although in the study villages there was little direct evidence that the income generated through international labor migration was being invested in agriculture, one recent study (Craig 1988) in the Tung Kula Ronghai (the "Weeping Plain of the Kula"), located in the southern portion of the Northeast (Map 1), has hinted at an interesting link between migration and agricultural investment. The Tung Kula Ronghai is one of the poorest areas of Thailand and also one of the most inhospitable. It suffers from flood, drought, and chronically infertile soils. In response, many communities in

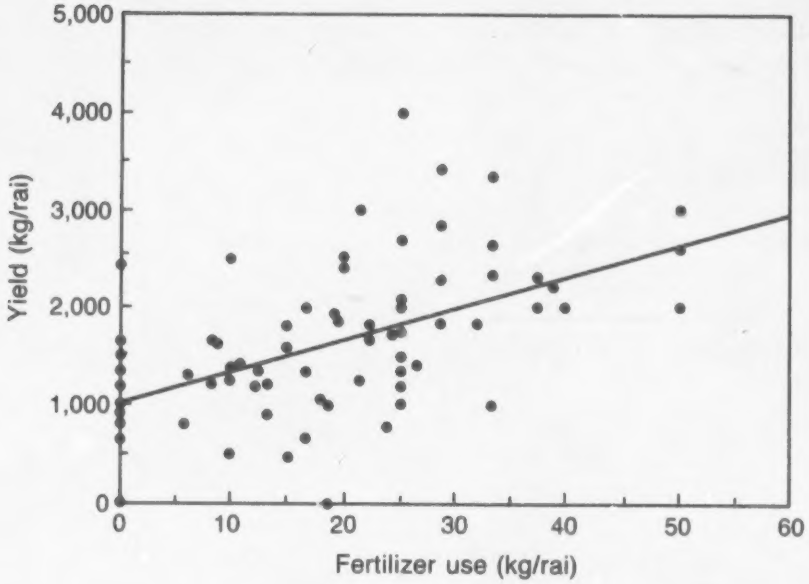

Figure 2. Intensity of fertilizer use and cassava yields: Tambon Don Han

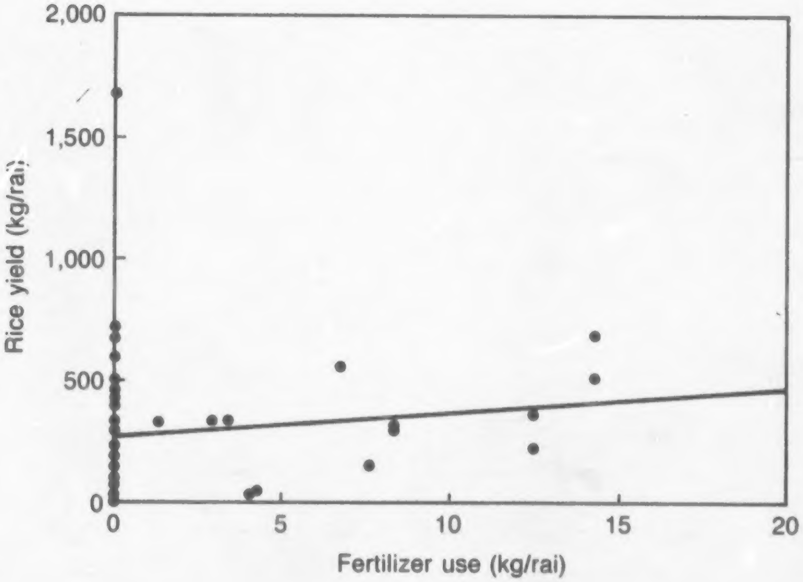

Figure 3. Intensity of fertilizer use and rice yields: Tambon Don Han

the area rely upon seasonal internal migration and on international migration to supplement their farm production. A paper on soil fertility management in the area, drawing on the findings of the Northeast Rainfed Agricultural Development (NERAD) project, found that it was likely to be those households who had engaged in off-farm work who invested in yield-increasing inputs and chemical fertilizers to sustain soil fertility (Craig 1988:159–160).

Other Types of Expenditure

Except for the repayment of loans, the largest portion of expenditure was directed toward purchasing electrical consumer goods. Fifteen of the 22 returnees bought video recorders, television sets, or tape recorders, representing 12.8 percent of total expenditure. Families also improved their homes by laying down linoleum, buying cupboards and chairs, and even installing refrigerators. Few households, however, considered the money used to purchase smaller articles as having come specifically from remittances, although the increased income undoubtedly allowed them to direct more money toward such nonessentials. Several houses took on the air of showrooms, so packed were they with consumer goods. Almost as much money as was spent on the purchase of consumer goods went toward house construction and improvement, which amounted to 11.6 percent of total expenditure. The tendency for international migrants to spend a sizable portion of their remittances on house construction is well documented (e.g., Singhanetra-Renard 1983:23–25); Roongshivin 1986:155); the large and impressive structures that result are referred to in the region by the term *baan saa-u*, or "Saudi houses." The obvious differences between these houses and those of many nonmigrants are sometimes mentioned as a source of jealousy and intravillage friction, although in Tambon Don Han such jealousies were not apparent. For some migrants the house they constructed upon their return was their first, enabling them to move out of their in-laws' houses. Others used the funds to enlarge or improve their existing homes—for example, to build a new room or a lavatory, or to construct a concrete wall and gate around their compound.

Both types of expenditure (on consumer goods and on their homes) improved the status of the migrant households within the communities. Certainly from the vantage point of the individual it was a very productive way of disposing of their migration-generated wealth. Whether an expenditure is regarded as "productive" or "consumptive" depends upon who is spending the money and who is assessing the expenditure—the state, the village, the household, or the individual. In the case of land purchases, for example, the transfer of land from one household to another does nothing to raise village production, which today in Northeastern Thailand usually necessitates that yields be increased. But from the perspective of the household the purchase of additional land does result in increased household production.

Migrants in Tambon Don Han also spent 5.1 percent of their total expenditure on the education of their children. A portion of their savings was also held in reserve to meet future educational expenses, as many of the migrants' children had not yet reached secondary school age, when fees have to be paid (primary schooling is ostensibly free). Thus in time the proportion of migrant income spent on schooling was likely to be higher still.

Of the remaining types of expenditure, the purchase of motorcycles and other motorized means of transport was popular (5.3 percent of expenditure), as was the acquisition of bicycles (only 0.5 percent but involving five households). Although purchased primarily as luxuries, the motorcycles also served a productive function for many of the households, being used to provide a taxi service for villagers and their goods to the main road and sometimes to the town of Khon Kaen.

In two of the 32 migrant households (both from Baan Don Han) investment in business ventures was a final important outlay. Those migrants invested 20,000 and 9,500 baht, respectively, in setting up small shops selling such items as cold drinks, cigarettes, and washing powder. Their decision to spend money in this way rather than on increasing agricultural productivity was due in part to the limited investment opportunities in agriculture, and also to their belief that Baan Don Han's income level was high enough (owing in part to international migrant labor) to generate the demand necessary to support two shops of this type. They were among a sizable number of migrants in the Northeast who have invested in service industries rather than in primary and secondary economic activities. The risks of doing so are perceived to be less, the skills and organization needed easier to acquire and less demanding, and the costs less burdensome.

The largest portion of accumulated income was not, however, spent but saved: more than 16,000 baht per household, and involving nine of the 22 households. Among the families of migrants who had yet to return from the Middle East the savings rate was even higher, almost 28,000 baht per household, because they were waiting for the migrants' return before deciding upon major expenditures. Nevertheless, it was striking that some households regarded migrant laboring not primarily as a means to purchase consumer goods, invest in agriculture, or build a new house, but rather as a way to establish a reserve fund *(thun samrong)* to meet future expenses and to tide the household through such emergencies as failed harvests and illnesses. Thus international labor migration enabled families to build up a lump sum as an insurance policy.

One of the households had already had to draw upon its reserve to pay for a 4,000 baht eye operation needed by the migrant worker's father-in-law. The use of migrant savings to create a reserve fund is rarely mentioned in the literature, but among the migrants of Tambon Don Han the opportunity to build up such a fund represented one of the great attractions of working abroad. In no other way could farmers earn an income great enough to put such large sums to one side.

Acquisition of Skills

Migrants return from the Middle East not only with cash and gifts but also with an entirely new experience and possibly with new skills that may benefit them at home. Of the 22 returnees I interviewed, 10 had found that their period of work in the Middle East and the skills that they had acquired or improved there were useful to them in Thailand.

The four men who had improved their building skills found that they were in demand as house builders. One of them was now competent in welding, carpentry, and working with cement; another was specializing in lavatory construction, an amenity that many households throughout the area were installing. (Poapongsakorn and Sangthanapurk 1988:88 also note that construction skills gained while abroad were of considerable benefit to returning migrants they studied.) Besides construction skills, migrants also mentioned truck driving and the ability to do electrical work as useful to them in the village. The single migrant who had worked in Singapore planted trees there. His wife reported that this experience had given him additional knowledge and skills with which he had improved his own cultivation methods. Nevertheless, the majority of migrants returned to farming and rarely used the skills they had acquired in the Middle East.

Arnold and Shah (1986:8) have reported that former migrants may lose previously acquired skills while in the Middle East because of lack of opportunity there to use them. This process of "de-skilling" has been observed (for example in the Philippines) among migrants who take jobs for which they are overqualified and in which their skills are not fully utilized (Findlay 1987; Stahl 1984; Smart et al. 1986). But in Tambon Don Han, where the inhabitants were unskilled or low-skilled, the only real possibility was for the migrants to acquire skills.

How much farmers' desires and expectations are changed by the experience of working abroad in a different culture, using new technology and being exposed to new work practices, is a moot point. Change there must be. Whether the experience causes a farmer to become more frustrated as he recognizes the disadvantages of his situation or elicits a concerted drive to improve his lot depends not only on the actual circumstances but also on the character of the former migrant. The headman of Baan Don Han, who had worked in Chittagong, Bangladesh, made the unusual observation that his time abroad made him appreciate how lucky he was to be a Thai.

MIGRATION AND NONMIGRANTS

The literature on Thailand has rarely mentioned the economic effect that international labor migration may have on households not involved in migration. The lack of comment on the subject suggests that nonmigrants are assumed to be isolated from the economic effects of labor migration. The tendency in the literature to treat migration-linked expenditure as separate from all other outlays also implies that a form of enclave economy has been created by the process of migration.

Although the main beneficiaries of international labor migration are the migrants themselves, some of the benefits do "trickle down" to nonmigrants. The effect that migration has upon labor supply is a case in point. During migrants' absence, their households usually meet labor shortages by hiring workers who are paid with remitted income. In Baan Don Han 37.5 percent of migrant households reported doing this. Poor or landless households took advantage of the increased availability of wage labor to boost their incomes. In this way some of the wealth associated with international labor migration filtered through to other households in the community. Cursory evidence also indicates that a few of the migrant households increased their leisure time, either by hiring additional workers to maintain production or by giving up some or all agricultural activities. Although landless households are usually considered to be the most disadvantaged members of a rural society, it is worth considering whether a landless household living in an area that has a thriving labor market is better off than a marginal (land-poor) peasant living in an area where the labor market is limited or nonexistent.

The household of Mr. Saay, who owned no land and was unable to raise the funds to work in the Middle East, is an example of a nonmigrant household that benefited from international labor migration. Members of his family supported themselves by working as wage laborers on the land of other villagers and in this way earned approximately 3,000 baht per year. In the absence of widespread wage labor they might have been forced to leave the village, most probably for Bangkok, to survive. It is noteworthy that the daily wage for most types of farm work in Baan Don Han (25 baht) was the same as that reported as being received by migrants working on the sugarcane fields in Kampaeng Phet and other provinces.

Wage labor in the agricultural sector is only one of the employment effects of international labor migration. The large sums of money invested in house construction and improvement also provided work for other villagers and generated considerable economic activity. In Baan Don Han many of the new houses were built by villagers from the neighboring community of Baan Don Daeng. The methods used were primitive and labor-intensive; they did not—as many studies maintain—benefit merely rich, town-based building contractors. The 12 percent of total expenditure that went into house construction and improvement represents a considerable flow of funds into the local economy. There are probably many other ways by which income generated through labor migration becomes distributed to nonmigrants. Panya et al. (1988:37), in their investigation of village charcoal-making enterprises, report that households engaged in off-farm labor often lacked the time and workers to collect firewood. In consequence, the households bought charcoal as a substitute fuel; and as most charcoal producers are poor (and often landless), this led to a limited redistribution of income. In small ways such as this, with low visibility, labor migration of all types has numerous effects upon the economy, forming new relationships and interactions between migrants and nonmigrants.

Migration also played a large part in improving the amenities and services available to the villagers in Baan Don Han. Returning migrants spent a portion of their income establishing shops, setting up taxi services, buying and hiring out tractors, and stocking fish ponds. These facilities were available to all the inhabitants, and they not only increased the amenities in the villages but also, in some cases, lowered costs. For example, the tractor purchased with funds generated through labor migration was hired out at the rate of 90 baht per rai (563 baht per hectare), whereas the usual rate in the area was 100 baht per rai (625 baht per hectare). Similarly, the fish pond owner sold fish to the villagers at considerably less than the market price. The new shops opened by returned migrants also saved villagers the cost, in time and money, of traveling to town for supplies.

Finally, migrants gave large sums of money to the temple fund and to community projects. At the time of the research a meeting house *(sala)* was in the process of being constructed, and migrants gave more to the fund than nonmigrants as a result of their greater wealth.

VILLAGE PERSPECTIVES ON MIGRATION

Earlier in this paper I noted that many previous studies have emphasized the unattractiveness of labor migration to the migrant and his family. This view applies to both international migration and internal rural-to-urban migration:

> Buppa Kongtham vows never to let her children go off to Bangkok, no matter how poor they are. She says that she has learned her lesson. "I lost my husband to madness. I lost my marriage. My family is broken to pieces," says the 36-year old divorcee. "I never want my children to risk suffering the same tragedy" (Ekachai 1988c:37).

In contrast with this experience, virtually all of the migrants of Tambon Don Han felt that working overseas was generally a good thing. A small number of wives talked of the negative emotional impact that their husbands' absence had upon them, and some mentioned that it was more difficult to raise their children with their fathers away. One woman also said that if her husband went to the Middle East (which she favored) she would rather that he did not work in Iran or Iraq, as she would be concerned for his safety there.[9] But the number of respondents who expressed the view that on balance it would be best if men did not work overseas was very small, only four out of 79 in Baan Noon Tun and Baan Sawaang Morodok and not one in Baan Don Han. Although some of the respondents appeared ambivalent on this issue, talking of the social and emotional effects on the one hand and of the need for additional income on the other, the financial benefits clearly far outweighed any negative effects. (It was striking in fact how few wives mentioned that they missed their husbands.) A villager working in Dubai or Saudi Arabia as a driver can remit up to 10,000 baht per month to his family; a *sip lor* (ten-wheeled truck) driver employed locally may receive 2,500 baht per month. Villagers indicated that migration was good not only for migrants and their families but also for the village economy as a whole, saying that migration resulted in the circulation *(mun, wian)* of more money in the village. One man even asserted that international labor migration was good for Thailand, as it led to additional resources flowing into the country. Although it was principally the wages that made such migration attractive to the villagers, some respondents also mentioned as inducements the opportunity to acquire and improve skills, a wider knowledge of the world (Singhanetra-Renard 1983:5 also notes this), and the added status that migration gives to migrants.

A TYPOLOGY OF MIGRATION IN THAILAND

Attempting to compile a comprehensive list of the types of labor migration, in Thailand or any other country, is probably a futile exercise. Migration may be cyclical and repetitive or a one-time occurrence. It may extend over a few months and be timed to coincide with the dry season, or it may result in an absence of several years. It may involve a trip of a few miles to a local town, or of several thousand miles to another country. Perhaps it is more useful to view migration in terms not of form, but of function. To the migrant the type of migration practiced is less important than its purpose. As Singhanetra-Renard (1988:27) notes, the people of Thailand

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[9] The Thai language newspaper *Raeng Ngaan Thai* (Thai Labor), which is marketed with international labor migrants in mind, gave prominence to the proposed cease-fire between Iran and Iraq and the prospective end to the war in its edition of 25–31 July 1988.

(and Indonesia) "view mobility to domestic and international destinations as a unified continuum."

In Thailand there are three principal reasons for migration: as a strategy of survival, as a strategy of accumulation, and for fun. But migrants may have several reasons for working away from home. Individuals traveling to "see the world" may also travel with the hope of accumulating funds, whereas those migrating to survive may be fortunate enough to secure employment that enables them to accumulate some capital. In addition, individuals may leave their villages for other reasons, such as to avoid conscription into the army. The reason for conceptualizing migration as the outcome of strategies, however inexact that may be, is that it helps in understanding the likely implications of the process for the source household and community.

The first strategy, migration for survival, usually involves rural–rural or rural-to-urban migration. Men, women, and sometimes entire households are forced to leave their villages during the slack season in order to survive. The migrants are of all ages (although often the old will be left behind to look after the very young), and the men and women usually have responsibilities beyond supporting themselves. The work obtained—cutting cane, working in slaughter houses—is poorly paid, and it is difficult for the migrants to accumulate substantial funds to take home.

> "Some [of the sugarcane laborers] can take home as much as 2,000 baht, but many become indebted to the plantation owners for food and rice. They then have to go back again the next year to work and pay off their debts" says Poh Lam. "It's like being entangled in a net, and you cannot cut yourself loose" (Ekachai 1988a).

(In contrast with the 2,000 baht mentioned in the preceding passage, international migrants commonly send home 5,000–10,000 baht per month). As Grandstaff (1988:14–15) states, however, in a paper exploring the relationships between environment and economic activity, the great mobility of Northeasterners is not motivated purely by poverty in their home villages. It is part of a diversified survival strategy designed to minimize risk, which has evolved as a result of the marginality of the environment and the variability of return from various activities. "In other words . . . the increased off-farm employment, like cassava, like the fishponds, like the cottage industries, like the charcoal making, etc., is yet one more element in an already diversified economic, and ecological, mix" (Grandstaff 1988:15).

Migration as a strategy of accumulation often involves working overseas, although rural-to-urban migration may also lead to the substantial accumulation of funds. Most international migrants are men, newly married or engaged to be married, with responsibilities or impending responsibilities, and the intention is to remit considerable quantities of money back to the household. Because the sending household has to be able to secure considerable funds to finance the trip abroad, this strategy normally excludes the poor. It is more difficult to characterize rural-to-urban migrants. Job opportunities are more readily available to them, migration is financially and socially less demanding, and the migrants are as likely to be female as male.

Migration for the purpose of having fun (*bai thiaw,* to go around, here and there, for pleasure) can be seen to be culturally determined and peculiarly Thai. Many young men and women, as part of the process of attaining maturity, desire to travel, see new places, meet new people, and experience new things. They usually take jobs and may be away from their home villages for more than a year. Their family responsibilities are fewer than are those of people who migrate for survival or to accumulate funds; although they may send money back to the household, such remittances are usually small and intermittent. Although the intention is to return, some of these migrants marry and settle elsewhere.

Thus migration from the Northeast is not a singular, undifferentiated activity. It occurs for various reasons, takes different forms, and has varying effects. Its spatial and temporal dimensions are easy to ascertain, even though they are hard to define. What is less clear is whether the factors underlying these forms are similarly varied. It is only when questions of motivation are investigated that the function of migration can be elucidated.

SUMMARY

This study has found that contract labor migration from Tambon Don Han to the Arabian Gulf was a reflection, in motivation and outcome, of the conditions in the sending communities. The lack of local opportunities and the pressures on young men to boost their incomes encouraged them to leave to work abroad, while the environment in the tambon and the reasons for leaving home determined how the funds generated were used. Migration with all its facets can be understood only when it is placed in its human and geographical context. The Don Han study has demonstrated that when agricultural potential is restricted, funds generated through international migration are unlikely to be invested in agriculture. When funds are directed toward agriculture, however, they are likely to be spent in the purchase of more land rather than in raising yields, and in agricultural endeavors other than cropping.

In addition, the findings presented here demonstrate the inadequacy of the simplistic division of expenditures into "productive" and "consumptive" categories. First, it fails to take into account the variations that may exist between different locations and the opportunities for productive investment that they may offer. Second, it unrealistically attempts to isolate migration-related income and expenditure from the total farm economy. Third, it represents an overly economic view of investment. And, finally, such analysis is that of the outsider, not of the villager, who often has a very different perspective on what is, and is not, productive.

A common criticism of international labor migration, that it is restricted to the richer households in a community and therefore exacerbates inequalities, was not borne out in the study. Migrants from Tambon Don Han were not richer than nonmigrants. Rather, the evidence—despite the difficulties of characterizing migrants in economic terms—indicates that most migrants were from the poorer households in the tambon. Nevertheless, the study communities are better-off than many in Northeastern Thailand, and any attempt to compare the economic status of nonmigrants and migrants prior to their migration faces the difficulty of reconstructing the past from the present.

In the study villages, migration and economic organization in general were heavily influenced by contact networks. The nontraditional activities that villages pursued were determined, to a considerable extent, not by their physical or economic attributes but by the economic connections they had managed to establish and the information they had managed to gather. For migrants these connections ranged from contacts with job placement agencies and frontmen *(naay naa)* to familiarity with banking operations. It was these types of contacts and knowledge that were most important in determining the incidence and type of migration from a particular village, and often in the success of that migration.

Most of the farmers of Tambon Don Han perceived international labor migration to be the only means by which they could earn and save sufficient funds to set themselves up in life. It enabled a household to build a new house or improve an existing one, to buy a television set or tape recorder, and to put aside enough money to pay for the education of their children and to act as a cushion during those bad years when yields or prices might be depressed.

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